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LOYOLA UNIVERSITY CHICAGO

IMPACT OF FIRST DISCLOSURE EXPERIENCE AND INTERNALIZED STIGMA
ON DISCLOSURE PATTERNS IN THE HIV+ COMMUNITY

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN SOCIAL PSYCHOLOGY

BY

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ABSTRACT

The present study examined possible antecedent factors that contribute to the type of discloser (HIV status) one becomes as well as the relation between discloser type, social support, and CD4 count. This study builds off previous research by Stutterheim et al. (2011) that examined differences between disclosure groups on a variety of variables, but the study did not examine variables that may contribute to the type of discloser a person becomes. The present study examined two variables that previous research suggests may influence the type of discloser (relative non-discloser, selective discloser, full discloser) a person becomes, first-disclosure experience, and internalized stigma. It was predicted that more positive first disclosure experiences would be related to more disclosures; full disclosers would report more positive first disclosure experiences than selective disclosers and relative non-disclosers, respectively. It was hypothesized that higher internalized stigma would be related to fewer disclosures; full disclosers would have the lowest internalized stigma scores and relative non-disclosers would report the highest level of internalized stigma. In addition, social support was predicted to fully mediate the relation between the type of discloser and CD4 count. Specifically, full and selective disclosers would report more social support than relative non-disclosers and, as a result, have higher CD4 counts than relative non-disclosers. SEM Path Analysis was employed to examine the relation between the aforementioned variables.

Results revealed that internalized stigma was negatively related to the type of discloser one becomes, as predicted. However, first disclosure experience was not significantly related to the type of discloser one becomes. Social support did mediate the relation between type of discloser and CD4 count, but not in the way originally hypothesized. Disclosure type was positively related to social support as hypothesized, but contrary to the prediction higher levels of social support were negatively related to CD4 count. Possible explanations for results and directions for future research are discussed in the final section.

CHAPTER ONE

SOCIAL PSYCHOLOGY OF STIGMA

Stigma is generally defined, by social psychologists, as a deeply discrediting attribute that is especially relevant in a social context (Crocker, Major, & Steele, 1998; Goffman, 1963). The stigmatized attribute can be either physical (e.g., skin color) or symbolic (e.g., sexuality) and educes shame in the person who possesses this attribute (Crandall, 1991). Essentially a stigma is an attribute or mark that is devalued by society and, if the stigma is known by others, leads to the *dehumanization* of the person who possesses this attribute. For example, being Black, homosexual, or HIV positive are stigmatized attributes that have caused shame in those who possess them and have lead to discrimination and dehumanization of people who possess these attributes.

The Impact of Stigma

Historically, we have seen the worst effects of stigmatization; slavery in the United States, the holocaust in Germany, and lethal intergroup conflicts in places like Northern Ireland, Darfur, and Rwanda. More frequently the results of stigmatization are not fatal, but serious none-the-less. Having a stigmatized identity can frustrate achieving important goals. Historically, people with stigmatized identities have faced discrimination obtaining jobs, housing, and other resources. *The Poz* website reported in August 2012 that a man in Tennessee lost his wife and job when he disclosed that he had

tested positive at a plasma donation center. Subsequent testing showed that the man was not HIV+ and the original test had been a false positive. Stigmatized individuals experience less control over life events than members of less stigmatized groups and struggle more to belong in social groups (Swim & Thomas, 2006). Research shows that members of stigmatized groups are often devalued and ignored (Van Laar & Levin, 2004). The negative psychological effects of stigma have are far reaching and impact many aspects of a person's life.

Cognitive Effects of Stigma

Sometimes stigmatized people internalize and accept negative stereotypes associated with their group and stereotype themselves (Hogg & Turner, 1987). Research has shown that normal weight and obese people tend to share the stereotype that overweight people lack self-regulation and both groups have a tendency to dislike overweight people (Crandall, 1994; Quinn & Crocker, 1999). Similarly, stigmatized people sometimes think they deserve their devalued status and support the system that devalues them (Jost & Banaji, 1994). However, research on self-esteem has shown that African-Americans (the most researched stigmatized group) do not have low self-esteem and actually have higher self-esteem than Caucasians (Twenge & Crocker, 2002). Furthermore, it has been shown that members of other stigmatized groups, such as obese people and the physically and mentally handicapped, do not suffer from low self-esteem (Crocker & Major, 1998). One exception to the aforementioned pattern is gender. Research examining the relation between gender and self-esteem reveals that males tend to have slightly higher self-esteem than females (Kling, Hyde, & Showers, 1999).

According to Crocker and Major (1989), the impact of prejudice and discrimination on self-esteem depends on the following three variables; (a) whether people attribute a negative outcome to a personal deficit or to prejudice or discrimination, (b) whether people compare themselves to ingroup members that share the same disadvantages or to members of the advantaged outgroup (e.g., Blacks comparing themselves to Blacks or Blacks comparing themselves to Whites), and (c) the importance members of stigmatized groups place on realms where they are most disadvantaged (e.g., the importance Blacks place on education). It has been shown that members of stigmatized groups can thwart threats to self-esteem by attributing a failure to *prejudice* (external attribution) rather than to *personal short-coming* (internal attribution) (Major & Crocker, 1993). In addition, it has been shown that devaluing domain where a stigmatized group is disadvantaged (e.g., African-Americans and education) is a common way that stigmatized groups cope with threats to self-esteem (Schmader, Major, Eccleston et al., 2001). Regarding a domain as insignificant buffers threats to self-esteem if one fails in that domain.

Attributing negative outcomes to prejudice and discrimination can protect a stigmatized person's self-esteem, but this strategy has deleterious effects on self-knowledge. In other words, the more frequently a person discounts negative outcomes or feedback (e.g., test scores, evaluations etc.) as invalid or a product of prejudice or discrimination the less one learns about his or her abilities (Major et al., 2002). Aronson and Inzlicht (2004) showed that Blacks who were more apprehensive about prejudice exhibited greater discrepancies in their predictions of scores on a test and their actual scores than Blacks who were lower in prejudice apprehension or Whites. Additionally, a

diary study showed that Blacks who were high in prejudice apprehension demonstrated more variable feelings of self-efficacy (sometimes they felt confident in their abilities and other times they did not) than did Black low in prejudice apprehension or Whites (Aronson & Inzlicht, 2004). The inconsistency in their feelings about their academic competence supports the assertion that prejudice apprehension (and attributing failure to racism) may undermine self-knowledge. Accurate self-knowledge is important to individual success because it is related to intelligence and goals setting (Gardner, 1999). If a person doesn't have an accurate knowledge of her skills or talents she may set goals that she can never achieve or never reach her full potential.

Sometimes stigmatization itself has a negative impact on performance, leading people to underperform, this is especially true in situations or environments where a group stereotype is relevant (e.g., women's performance on a math test as opposed to English test). *Stereotype threat* refers to discomfort or anxiety a person feels when they are in a situation where they could confirm a negative stereotype about their group. Fear of confirming the stereotype leads to higher levels of physical arousal and this arousal has been shown to diminish working memory that is essential for optimal performance (Inzlicht & Good, 2004). Research on stereotype threat has shown that women perform significantly worse on math tests when their gender has been made salient, based on the stereotype that women are less competent in math than men (Inzlicht & Ben-Zeev, 2000). Similar results have emerged with other stigmatized groups (Steele & Aronson, 1995).

External Effects of Stigma

Members of stigmatized groups are more likely to have lower SES than people who are not members of these groups. In the United States, Blacks as a group have lower

incomes and less education than Whites (LaVeist, 2005). Lower SES is associated with variety of negative outcomes, including decreased access to health care (Penner et al., 2009).

Additionally, stigmatized people are thought to experience poorer mental and physical health. Experiencing stigma has been shown to be related to higher levels of anxiety and cardiovascular problems (Clark, Anderson, Clark, & Williams, 1999; Tomaka, Blascovich, Kelsey, & Litten, 1993). It has been argued that prejudice and discrimination taxes the body in ways that makes people more susceptible to disease (Pascoe & Richman, 2009). Other scholars have argued to that is difficult to establish a causal link between stigmatization and stress responses (Brown, Matthews, Bromberger, et al., 2006).

The Origins of Stigma: Theoretical Perspectives

Evolutionary Theory and Processes

In most basic terms, the evolutionary perspective posits that certain genetic variants are selectively transmitted to offspring rather than others. These variants result in characteristics (phenotypic) of human populations (Schaller, Gideon, Conway, & Peavy, 2011). For example, natural selection favored those early hominids that could walk upright as opposed to those used their hands for locomotion as having the use of upper extremities while walking was advantageous (i.e., they could carry offspring and food while walking). The large human brain, like being bipedal, is a product of the evolutionary process. The human brain, its physical characteristics, capabilities, and proclivities have evolved (or developed) in response to selective pressures in ancestral environments (Schaller, Gideon, Conway, & Peavy, 2011). Research has shown that

attentional biases (Maner, Gailliot, Rouby, et al., 2007), cognitive shortcuts in processing information (Gigerenzer, Todd, & the ABC Research Group, 1999), logical reasoning abilities (Cosmides & Tooby, 2005) and learning (Ohman & Mineka, 2001) are products of natural selection because they were evolutionary adaptive strategies.

The aforementioned cognitive adaptations can be applied to the psychology of prejudice to explain why people may react or respond to other people. It is theorized that because *homo sapiens* are a physically weak species, it is advantageous for them to live in groups (e.g., one person versus a lion is no match, but a village of people wielding weapons is much more formidable). Thus, it was important for the survival of the species for human beings to live in cooperative groups and those who were not cooperative would not live long enough to reproduce and pass on their genes. It is hypothesized that humans evolved to have characteristics that helped them to live a lifestyle of obligatory interdependence (Brewer, 1997).

Intergroup conflicts as threats to survival. One of the consequences of this adaptive strategy are mechanisms that afford people to determine who is part of their coalitional group and who is not, so that people can act prosocially (altruistically) toward members of their ingroup (family, coalition, tribe, clan etc) and not to people who fall outside their ingroup (outgroup) (Brewer, 1999; Brewer & Caporeal, 2006).

This occurred, presumably, because it is advantageous to help people who will reciprocate when you are in need, thus giving you a better chance to survive and reproduce. It is not advantageous to help others who would not help you or your kin (or worse harm you or your kin).

Historically, intergroup encounters have been linked to an elevated level of intergroup (and interpersonal) aggression and physical injury often resulting from competition over resources (Schaller & Neuberg, 2008). As a result, human beings may have the evolved psychological mechanisms (or cognitive shortcuts) that lead them to implicitly associate outgroup members with negative qualities such as aggression and violence (Schaller, Gideon, Conway, & Peavy, 2011). In support of this supposition research has shown that people rate ethnic outgroups as more hostile when they (the participants) are placed in a vulnerable position (e.g., in the dark) or if the participant is inherently more fearful (Schaller, Park, & Faulkner, 2003; Schaller, Park, & Mueller, 2003). In line with this, male outgroup members (because they are stronger and more aggressive) should be thought of as more dangerous than female members of an outgroup because they are physically stronger than women and thus more threatening. Research on stereotyping shows that males are, in fact, more associated with aggression and violence stereotypes than females (Maner, Kenrick, Becker, et al., 2005).

Intergroup transmission of infectious pathogens as threats to survival.

Infectious pathogens or diseases are also a threat to human survival, because they can lead to illness and death. Threat of disease is thought to contribute to or be an explanation for ethnocentrism (and subsequently prejudice and stigma) because intergroup relations are associated with increased exposure to infectious pathogens. This is due, in part, to the fact that different groups and cultures have prescribed to different norms about personal hygiene and food preparation and this has contributed to an elevated risk of disease transmission between groups (Schaller, Gideon, Conway, & Peavy, 2011). Given contracting pathogens is serious threat to reproductive fitness it is believed that human

beings have evolved psychological mechanisms that sensitize us to others who appear to pose an infection risk this then leads to an aversive response to these individuals (Schaller, Gideon, Conway, & Peavy, 2011). Stigmatization, and avoidance, of people (or outgroups) who *appear* to carry diseases that threaten physical health and/or survival may have been a useful adaptive strategy.

Research by Schaller and Duncan (2007) provides additional support for this assertion. Just as people are more likely to have hostile feelings toward ethnic outgroups when they feel physically vulnerable to attacks (e.g., in the dark where there is a decrease in visibility) people are more likely to have prejudicial responses toward outgroups when they feel vulnerable to disease. This effect is amplified when the outgroup is seen as being subjectively unfamiliar or dissimilar. Research on Canadians nationals, showed that when Canadians perceive themselves to be vulnerable disease they show increased levels of prejudice toward immigrants from unfamiliar regions (e.g., Peruvians) but do not show increased prejudice toward immigrant groups that are more familiar to them (e.g., Poland) (Faulkner, Schaller, & Park et al., 2004). This research supports the assertion that unfamiliar customs (and their relation to infectious diseases) may play a role in the aversion to specific outgroups.

Furthermore, it has been shown because diseases are associated with a wide variety of physical and behavioral abnormalities, any kind of anomalies in appearance can trigger prejudicial responses. This is true regardless of whether the abnormality is actually a symptom of a disease (e.g., amputation as a result of an accident) (Kurzban & Leary, 2001; Schaller & Duncan, 2007). Additionally, research has shown when people feel especially vulnerable to diseases they exhibit strong implicit prejudices toward

people who display a variety of anomalous physical characteristics including people who are physically disabled, overweight, or elderly (Duncan & Schaller, 2009; Park, Faulkner, & Schaller, 2003; Park, Schaller, & Crandall, 2007). Moreover higher levels of prejudice are directed at physically unattractive people when participants feel susceptible to illness. Scholars believe increased stigmatization of unattractive others occurs because physical unattractiveness is used as a heuristic (indicator) for poor health (Zebrowitz, Fellous, Mignault, et al., 2003).

Cultural Evolution and Stigma

Akin to the process in which some genes are selectively passed through the process of sexual reproduction, some knowledge structures are selectively transmitted via interpersonal communication and this process sculpts the belief systems typify human cultures (Schaller, Gideon, Conway, & Peavy, 2011). Stereotypes are one such knowledge structure that has been selectively transmitted through interpersonal communication.

It's argued that idiosyncratic stereotypes are more likely to be transmitted because they are more likely to be talked about. Increased discussion of a particular stereotype eventually makes it commonplace. This occurs only for groups that are highly visible in a geographic region—because they are groups people are more likely to talk about (Schaller, Gideon, Conway, & Peavy, 2011). Research has provided support for this claim insofar that stereotypes about more prominent groups have persisted (e.g., Blacks in the United States) than for groups that are not as prominent (e.g., Pakistanis in the United States) in a given region (Schaller, Conway, & Tanschuk, 2002).

Importance is another factor that influences the promulgation of stereotypes. People are more likely to share information with conversational partners that they believe is *important* for their conversational partners to know. Presumably this is the reason why stereotypes related to health and safety are prominent and tend to persist (Young, 2003).

Stereotypes or information that evokes an emotional response are more communicable than those that do not evoke emotions. Visceral reactions to stereotypes (or other information) make those stereotypes more salient and robust. In support of this, Heath, Bell, and Sternberg (2011) found that Urban Legends are more communicable because, in part, they arouse disgust.

Criticisms of Evolutionary Theory

Despite the support for evolutionary processes (both genetic and cultural) related to stigma, Evolutionary Psychology and the explanations derived from it have received a considerable amount of criticism. Many argue that the theory is not testable (or unfalsifiable in principal) and falsifiability is a criterion for all good scientific theories. Empirical evidence supporting a theory functions to validate that theory; good theories allow us to make predictions based on the theory. Developing testable predictions using the evolutionary approach is difficult, in part, because it must forge connections between phenomena operating at different levels of analysis (it's difficult to show how a particular environment shaped our cognitive structure and to show that our functioning is derived from that structure) (Schaller, Gideon, Conway, & Peavy, 2011).

Cognitive Theory and Processes

Allport (1954) argued that prejudiced thinking is normal and that these biases were a consequence of human cognition and our inclination toward categorization.

Categorization is a useful adaptation because it allows us to survive and react in a complex world. This proclivity to categorize also leads people to categorize themselves and other people into groups and from this various ingroups and outgroups are formed. These generalizations lead to the minimization of within group differences and the exaggeration of between group differences (i.e., *we* are very similar but *we* are significantly different from *them*). The above mentioned intergroup generalizations facilitate group stereotypes, prejudice, and stigmatization (Russell & Fiske, 2011).

Research starting in the 1980s began to provide evidence for this cognitive categorization perspective. The “cognitive miser” position (Taylor, 1981) posited that people have limited resources when processing information from the world around them. As a result of these limited resources, people relied heavily on cognitive shortcuts or heuristics, such as categorization, to efficiently process information or make decisions. According to Fiske and Russell (2011), categorization lays the foundation for stereotyping and prejudice in the following ways: (a) tags information by physical and social distinctions (such as race and gender), (b) minimizes within group differences and simultaneously amplifies between group differences, and (c) causes outgroup actions to be interpreted stereotypically.

Research in support of this theory has shown how cognitive shortcuts increase the illusion of homogeneity of group members, encourages illusory correlations between minority group membership and negative behaviors (e.g., Black males and aggression) and it biases memory to organize information in stereotype consistent manner (Rothbart, 1981; Fiske & Russell, 2011). These negative mischaracterizations of outgroup members leads to stigma. Groups that are associated with a variety of negative qualities or

behaviors become stigmatized. For example, common stereotypes associated with African-Americans are laziness, aggression, and being uneducated.

Research has shown that people automatically categorize others by physical characteristics (e.g., race, gender, age, etc.) within a matter of milliseconds and this categorization automatically activates stereotypes associated with the particular group. These group stereotypes are then applied to the individual (see Fiske, 1998 for a review). Furthermore, research has shown that priming a person with group membership predicts nonverbal behaviors, affective responses, and attitudes toward outgroup members (for review, see Fazio & Olson, 2003).

People can combat the effects of stereotypes if they have the cognitive resources and motivation to do so (Blair & Banaji, 1996; Kruglanski & Webster, 1996; Fiske & Neuberg, 1990). However, regulation of stereotype behavior has been shown to exhaust the cognitive resources needed for regulation and this ironically leads to the resurgence the stereotype activation (Bodenhausen & Macrae, 1996; Macrae, Stangor, & Milne, 1994; Richeson & Shelton, 2003).

The role of affect in cognition. Affect has been shown to play a role in general cognitive processing related to stereotyping or other heuristics. Incidental affect, or mood not related to the situation, has been shown to shown to degrade people's ability or motivation to perform more complex cognitive tasks. Mackie (1992) found that positive affect was related to greater reliance on stereotypes and the propensity to view outgroups as homogenous. Another study demonstrated that when people are happy or angry they are more likely to rely on stereotypes compared to when they are sad (reported in Bodenhausen, 1993).

There are two possible explanations for the aforementioned pattern of result. The first is that affect affects a person's ability to process information because moods associated with higher arousal can drain the cognitive capacity needed to process information thus making reliance on stereotypes much more likely (Smith & Mackie, 2011). The other theory is that affect negatively affects a person's motivation to process information. According to this explanation when people are in positive moods they believe "everything is fine" and are not motivated to process information in-depth; if things are okay there is no reason to contemplate further. Negative affect has the opposite effect on cognitive processing because negative affects makes someone feel more sensitive to possible threats in their environment and this leads to engage in in-depth cognitive processing (Schwarz & Clore, 1983). It has also been suggested that type of processing is a strategy for mood preservation or repair. Happy people will be less likely to engage in deep processing because it might wreck their positive mood and those in a negative mood may be more likely to engage in complex processing because it serves as a distraction to their negative mood (Isen & Levin, 1972). However, neither Schwarz and Clore (1983) nor Isen and Levin (1972) can fully account for the Bodenhausen (1993) findings as anger and sadness are both negative emotions.

Self-Identity and Self-Categorization

According to social identity theory the development of our self- concept is tied to particular social groups that one is a member of (Tajfel & Turner, 1986). Group membership results in the categorization of an ingroup (the group(s) we are a member of) and an outgroup people who do not belong to the ingroup. As soon as we categorize ourselves into an ingroup or outgroup we begin to engage in an "us versus them"

mentality. Group identification makes the ingroup part of the self and anything related to the group becomes self-relevant. We favor our ingroup and we get a boost in self-esteem from our group membership (Duff, 2012). Thus, we are motivated to value our group identities and see our ingroups as distinctive or even superior to other groups. It is from this inclination (ingroup favoritism and intergroup comparison) that the stigmatization of other groups is thought to have developed (Abrams & Hogg, 2010).

Self-categorization theory helped to explain which of our group identities becomes salient and subsequently influences behavior. Oakes (1987) argued that the salience of social identity becomes salient depends largely on *accessibility* and *fit*. Essentially, those group memberships that are accessible are categorizations that are most frequently used and are relevant in a particular situation (Abrams & Hogg, 2010). For example, being female is a category that is chronically accessible (as we are inundated with “gendered” products and programming on a daily basis). Gender is also a situationally accessible category during math-related academic testing where stereotypes about female performance are prevalent (Inzlicht & Ben-Zeev, 2003).

Research has shown that people will sacrifice their own personal interests to ensure that their group gained more than an outgroup (Tajfel, 1969). This effect was stable even with minimally defined groups (group membership created in a lab or study setting as opposed to the real world) and when the gain was symbolic as opposed to material (Abrams & Hogg, 2011). This research showed that group membership is important to human beings.

Researchers have argued that group membership and group identity are important to people because people reap positive benefits from group membership. Sedikides and

Strube (1997) argued that people sought to attain positive uniqueness of their group through comparisons with other groups (outgroups). From these comparisons individual members of groups are thought to benefit by self-enhancement and a boost in self-esteem. In an attempt to understand the relationship between self-esteem and group identity, specifically ingroup favoritism, Abrams and Hogg (1988) found that data supported a positive relationship between self-esteem and ingroup bias as opposed to the belief that ingroup bias is compensation for low self-esteem. However, research conducted by Houston and Andreopoulou (2003) revealed that group identification was more likely to have an effect on self-esteem rather than self-esteem having an influence on group identification.

As is (almost) always the case in Social Psychological inquiry, the relationship between self-esteem and ingroup favoritism (and outgroup derogation) is complicated and affected by other variables. For example, research shown that individuals with low self-esteem may not be well resourced to engage in intergroup competition and folks with high self-esteem might seek out self-enhancement through intergroup competition (Abrams & Hogg, 2004). Hogg and Sutherland (1991) manipulated personal self-esteem and found that those with lowered self-esteem showed greater levels of ingroup favoritism (they awarded more points to ingroup than the outgroup in a minimal groups paradigm), but the ingroup favoritism did not predict their postgroup self-esteem scores. The results of a metanalysis showed that people high on global personal self-esteem are most likely to engage in outgroup derogation (Aberson, Healy, & Romero, 2000).

Group identification is another variable that plays a role in the relationship between ingroup favoritism and self-esteem. Gagnon and Bourhis (1996) found that

ingroup favoritism and discrimination toward the outgroup was associated with a boost in self-esteem, but only for people who strongly identified with the ingroup. Platow et al. (1997) found that participants with high personal self-esteem but low social self-esteem were more likely to engage in discrimination than those with high social self-esteem. Research has shown that self-esteem becomes increasingly motivating when one's social identity is threatened, and in situations where group categorizations are more meaningful (Branscombe & Wann, 1994; Long & Spears, 1997; Turner, 1999).

The role of affect in group identification. Intergroup emotions theory (IET) (Mackie, Devos, & Smith, 2000) suggests that the (in)group is an extension of the self and emotions are generated by appraisals of objects that impinge on the individual (Frijda, 1986). IET posits that there could be (and are) different types of prejudice and distinct behavioral reactions that are determined by emotional reactions toward other groups (this can also occur within an ingroup, but this will not be discussed here). For example, emotional reactions of fear or disgust elicit avoidance and confrontation most often follows feelings of anger (Mackie & Smith, 2002). Cottrell and Nueberg (2005) found that White Americans regard different outgroups as posing different types of threats (e.g., threats of violating ingroup norms, contamination, or disease, etc.) and they feel emotions that correspond with these types of threats.

Additionally, group emotions are related to group identification. It has been shown that positive group emotions (like pride or satisfaction) are associated with stronger identification with an ingroup (Smith, Seger, & Mackie, 2007). Shared anger toward a particular outgroup (or outgroups) has also been shown to be positively related to identification with an ingroup (Kessler & Hollbach, 2005). However, other negative

group emotions (e.g., guilt or anxiety) have been shown to have a negative relationship with group identification. Going along with this, Doosje, Branscombe, Spears et al. (1998) found evidence to support the supposition that high group identifiers were more likely to reinterpret negative/shameful events to avoid feeling painful emotions, such as guilt or shame.

Research has shown that the emotions that arise from well-intentioned intergroup contact can contribute to continuing negative intergroup relations. Stephan and Stephan (1985) (and Gaertner & Dovidio, 1986) argued that intergroup anxiety can lead to negative intergroup communication or experiences. This anxiety may arise from the lack of knowledge or experience with outgroup members and this anxiety or arousal disrupts smooth social behavior. These negative events (or the anxiety caused by potential intergroup interaction) can then lead to avoidance of outgroup members. Avoidance of outgroups contributes to negative intergroup relations.

Individual Differences in Prejudice

Social Psychology learned that prejudice is something that common to every human being and has moved away from explanations that prejudice and discrimination are only endorsed and perpetrated by people who are mentally deranged. There is still research to support that people may differ on how dispositionally prejudiced they are (Allport, 1954).

Research has indicated that some people are more motivated to control prejudice than other people (Fazio & Olson, 2003). It has also been demonstrated that people who score high on an explicit measure toward one group are more likely to score high on explicit measures toward other stigmatized groups (Altemeyer, 1998). This is

“generalized prejudice has also been found in implicit measures (Cunningham, Nezlek, & Banaji, 2004). This research provides support for the idea that some people may be more prejudiced than others.

Right-wing authoritarianism (RWA) (Altemeyer, 1981, 1998) was first described as a dispositional set of traits that includes: submission to authority figures, authoritarian aggression (support of punishment by authorities for wrong doing), and adherence to norms established by authorities (conventionalism). Research has shown that RWA predicts explicit prejudice toward ethnic minorities, women, the physically disabled and especially homosexuals (Duckitt, 2006; Lippa & Arrand, 1999; Peterson, Doty, & Winter, 1993). The research on RWA and implicit prejudice has been more mixed. RWA has been shown to predict implicit prejudice toward Blacks (Rowatt & Franklin, 2004), but not homosexuals (Rowatt, Tsang, Kelly et al., 2006). However, when RWA was combined with other ideological measures it did predict implicit prejudice toward homosexuals and other groups (Cunningham, Nezlek, & Banaji, 2004).

Social dominance orientation (SDO) has also been shown to be related to higher levels of prejudice and discrimination. Those higher in SDO believe that society should be hierarchically structured and opposed equality (Sidanius & Pratto, 1999). Evidence suggests those high in SDO are more, racist, sexist, homophobic, and prejudiced toward immigrants and the physically disabled (Altemeyer, 1998; Duckitt, 2001, 2006; Pratto, Sidnius, and Stallworth et al., 1994). However, there is no evidence to suggest that SDO predicts implicit prejudice (Pratto & Shih, 2000).

Together it has been shown that RWA and SDO account for up to 50% of the variance in explicit prejudice to outgroups (Altemeyer, 1998). In addition to RWA and

SDO several of the Big Five personality traits have been related to prejudice. Research has shown that people who are lower in agreeableness (and the facet of tender-mindedness) tend to be more prejudiced (Ekehammer & Akrami, 2007). Greater prejudice has also been negatively associated with warmth (Ekehammer & Akrami, 2007) and empathy (Stephan & Findlay, 1999). SDO has been shown to be negatively related to warmth, agreeableness, and tender-mindedness (Heaven & Bucci, 2001; Pratto, Sidnius, Stallworth et al., 2004) traits that have been shown to be related to prejudice. Moreover, It has been shown that SDO partially mediates the relationship between agreeableness to prejudice (Sibley & Duckitt, 2008).

Furthermore, some evidence suggests that those lower on openness to experience are more prejudiced (Ekehammer & Akrami, 2003). Research has shown that RWA is negatively related to openness to experience (Ekehammer, Akrami, Gylje et al., 2004) and the relation between openness to experience to prejudice has been shown to be partially mediated by RWA (Sibley & Duckitt, 2008).

However, some scholars believe SDO and RWA are not personality dispositions, but rather sociopolitical ideologies (Duckitt, 2000). Duckitt (2006) showed that (in line with predictions) that the relationship between SDO and prejudice was mediated by beliefs that groups must compete with each other for resources. This is directly related to evidence that shows those high in SDO are more likely to view the world as a place that people must compete in order to survive (Duckitt, 2001). Those who are high on RWA, on the other hand, are more likely to view the world as a dangerous place (Duckitt, 2001). In line with this, Duckitt (2006) found that the relationship between RWA and prejudice was mediated by beliefs that outgroups threaten ingroup norms.

Other's have argued that SDO and RWA are basic components of political conservatism (Jost, Glaser, Kruglanski et al., 2003). Essentially, political conservatism then may be considered the root of prejudice. This assertion is based on the belief that conservatism accepts inequality (or does not support equality). In support of this SDO and conservatism, research has shown that they are related (Sidanius & Pratto, 2002). RWA is thought to be related to conservatism in that it captures resistance to change. Just as with SDO, research has shown that RWA and conservatism are related (Altemeyer, 1998).

If conservatism is the basis of prejudice then political conservatives should be more prejudiced than liberals. However, this has not been shown. Social conservatism and political conservatism are more related to racism than is economic conservatism (Cornelis & Van Hiel, 2006). Moreover, Gaertner and Dovidio (1986) have argued that (North American) liberals are aversive racists. Research has shown evidence of racial bias among those on the political left (Sniderman & Piazza, 1993).

CHAPTER TWO

HIV/AIDS SPECIFIC STIGMA

Understanding the HIV/AIDS stigma is more complicated than stigma related to other groups. Unlike race or gender, there are several different and compounding factors contributing to HIV/AIDS related stigma. First, AIDS is a potentially lethal infectious disease (and certainly lethal in the first years of the epidemic) associated with physical symptoms that are not only visible, but devastating and frightening (e.g., Kaposi Sarcoma and massive weight loss). Second, HIV infection has been strongly associated with IV drug use and homosexuality (and anal intercourse) which is seen as disgusting and immoral by some members of society (Herek & Capitanio, 1999; Pryor, Reeder, Vinacco, & Knott, 1989). Lastly, HIV/AIDS is associated with groups that were already stigmatized such as gay men, drug addicts, and ethnic minorities. This association with existing stigmatized groups provides a ready-made (negative/stigmatized) social categorization for people infected with HIV (Pryor & Reeder, 1993). Since the nature of HIV/AIDS related stigma is more complex than most types of stigma, theories examining group-related stigma (like those discussed in the previous section) cannot fully explain the stigma that exists towards HIV positive people. However, elements of those theories are certainly relevant in understanding portions of HIV related stigma.

Fear of infection with HIV has been one of the reasons that HIV/AIDS has been stigmatized. Fear of infection with HIV is not too far removed from evolutionary

explanations (fear of disease transmission) for stigma, since contracting a potentially lethal virus would frustrate reproduction of one's genes. Indeed, research has shown that AIDS, in and of itself, may be stigmatizing because it represents a flaw or limitation of the human body (Goffman, 1963; Sontag, 1978). More importantly people with lethal diseases are stigmatized, because people fear death (Herek, 1990; McNeill, 1976) and contagiousness (Herek & Capitanio, 1998). However, persons with AIDS (PWAs) or HIV positive people are more negatively evaluated than are people with other diseases (Katz, Hass, Parisi, Astone, & McEvaddy, 1986; Greene & Banerjee, 2006), thus suggesting that there is more than fear of disease or death contributing to HIV/AIDS stigma.

As previously mentioned, HIV related stigma is severe because it associated with already devalued outgroups. Herek and Glunt (1993) say "...AIDS seems to have provided many Americans with a vehicle for expressing anti-gay prejudice. It is a convenient hook upon which they can hang their preexisting hostility toward gay men..." (231). Indeed, research has shown that people who hold negative views toward homosexuals are more likely to be poorly informed and fearful about AIDS, and more likely to stigmatize people with AIDS (Bouton et al., 1987; D'Augelli, 1989; Pryor, Reeder, Vinacco, & Knott, 1989). Herek and Capitanio (1998) found similar results nearly a decade later: symbolic prejudice (HIV/AIDS as a symbol for homosexuality, promiscuity, immorality) and fear of infections were both related to AIDS related stigma. Upon further investigation, fear of infection was also associated with incorrect knowledge about the transmission of HIV that is known to be correlated with anti-gay sentiment.

Social cognition theories shed light on how HIV may have become strongly associated (and thus becomes a symbol for or synonymous) with homosexuality, promiscuity, IV drug use, and general immorality (Pryor & Reeder, 1993). Likening memory to an associative network, a person with HIV/AIDS is connected to the HIV node and that node comes with its own set of concepts (e.g., homosexuality, drug use, death, negative affect) (Pryor & Ostrom, 1987; Pryor & Reeder, 1993). The probability of the activation spreading along the associative pathways is increased with the recency and frequency of the activation (Wyer & Srull, 1989). Therefore, chronic accessibility and recent experiences (and priming) of certain concepts may be important to one's reaction. If this chain of certain nodes is repeatedly accessed this particular network may become automatic (Smith, 1984; Smith & Lerner, 1987). For example, if every time I think about HIV I think about diseases associated with homosexuality and how much I dislike homosexuals, then after a while HIV/AIDS, homosexuality, and the negative affect associated with homosexuality become "packaged" into one thought as opposed to a chain of three separate thoughts (Pryor & Reeder, 1993; Pryor, Reeder, & Landau 1999). The other implication is that when one of the thoughts (e.g., HIV) comes to mind others (e.g., homosexuality, death) will pop up automatically. Given that images and media coverage of HIV in the early stages of the epidemic vividly depicted homosexuals (or Haitian immigrants) suffering excruciating painful deaths, it is easy to see how these associations may have been facilitated.

In support of the theory, Pryor, Reeder, and Lavalley (1989) showed that when a person (hiring manager) had negative attitudes toward homosexuality he or she was significantly less likely to hire a highly qualified trainee who was HIV positive (but not

described as homosexual). Those hiring managers who held more positive attitudes towards homosexuality were equally likely to hire both HIV positive and HIV negative well-qualified trainees. A study by Rozin, Markwith, and McCauley (1994) showed how the association of HIV stigma related concepts could contaminate social objects. College students were less likely to use (clean items) when they were said to have once belonged to someone with HIV than when they had once belonged a healthy man or a man who had lost a limb in an accident.

Just as with other stigmas individual differences plays a role in the propensity and motivation to control prejudice in HIV related stigma. As was mentioned above, the inaccurate understanding of how HIV is transmitted (e.g., hugging, kissing, sharing eating utensils, etc.) is positively related to increased levels of stigmatization Herek & Capitano, 1999; Herek & Glunt, 1993). It has been shown that inaccurate knowledge is correlated with political conservatism (Pryor & Reeder, 1993). Moreover, research has shown that conservatives tend to have more negative attitudes toward those with HIV than do liberals (Herek & Capitano, 1998; Groer, Miller, Solomon, Webster, & Saucier, 2010; Weiner, 1993). This pattern of results seems to support the position advocated by Jost, Glaser, Kruglanski et al. (2003) that stated conservatism is the root of prejudice and is related to (RWA and SDO).

Stigma toward people with HIV and AIDS is positively correlated with the frequency of attendance of religious services (Pryor & Reeder, 1993). This finding is echoed in the literature on stigma in general in that the more people hold fundamentalist religious beliefs the more likely they are to be explicitly prejudiced (Altemeyer, 1996). However, this was only true for those who hold fundamentalist religious beliefs; people

who hold more orthodox religious beliefs are not necessarily more prejudiced (Laythe, Finkel, Bringle et al., 2002). This is not surprising considering that the fundamentalist religious community has especially strong negatives toward homosexuals and promiscuity. Additionally, religiosity and conservatism are linked (Citation?)

Moreover, it has been shown that people living in rural areas are more likely to be prejudiced against people with HIV/AIDS than people living in urban areas (Gonzalez, Miller, Solomon, Bunn, & Cassidy, 2009; Pryor & Reeder, 1993). There is also evidence for race differences. Research has shown that Blacks are more prejudiced toward people with HIV than are Whites (Herek & Glunt, 1993; Overstreet, 2012). Blacks are also more likely to overestimate the risk of transmission through casual contact, endorse coercive AIDS-related policies (like quarantine), and attend religious services than are Whites (Herek & Glunt, 1993).

HIV/AIDS: Compounded Stigma and Responsibility

One of the major ways in which work on HIV related stigma has informed the general area of stigma is in its work on understanding the effects of multiple (concurrent) stigmatized identities. Since HIV related stigma, by its very nature, is an amalgam of different stigmas it pushed researchers to look at the relationship and the impact of having multiple stigmatized identities.

Crandall (1991) showed that the impact of multiple stigmas is additive. In other words, a homosexual person with HIV will experience double the amount of stigma than a heterosexual person with HIV. Research has shown that homosexual men with HIV experience more stigma than heterosexual men with HIV (Herek & Capitanio, 1999; Gonzalez, Grover, Miller & Solomon, 2011; Weiner, 1993). Additionally, heterosexual

men fear disclosing their HIV status for fear that they will be seen as homosexual and incur additional stigma based on sexuality (Gonzalez, Grover, Miller & Solomon, 2011). Ethnic minorities with HIV experience more stigma than Caucasians with the virus (Rao, Pryor, Gaddist, & Mayer, 2008).

Another way in which HIV related stigma has informed (or at least expanded) the general stigma research is in examining the possible responsibility one has for their stigmatized status and the role that plays in reactions to stigmatized people. People who have contracted HIV unlike being African-American (the most commonly studied stigmatized identity), are often seen as responsible for their infection and subsequently their new stigmatized identity (Weiner, 1993). Weiner argues that causal attributions may be important to the reactions to the stigmatized.

In general people think that those with HIV are more responsible for their stigmatized identities than those with Alzheimer's, Blindness, Cancer, Heart Disease, or Paraplegia. However, HIV positive people were seen as less responsible for their plight than obese people, drug addicts, or child molesters (Weiner, Perry, & Magnusson, 1988). In line with attributional theory, people express more anger and less pity toward people with HIV than most other groups (with the exception of child molesters or drug addicts) (Weiner, Perry, & Magnusson, 1988). This suggests that people who are seen as responsible are generally seen as deserving of anger and are not deserving of pity.

The above mentioned results hold true when the mode of HIV transmission is unspecified. When researchers specified the means of HIV transmission the pattern of affective attributions was differentiated. When a person was said to have contracted HIV via uncontrollable means (e.g., blood transfusion) people felt significantly less anger and

significantly more pity than when the mode of transmission was unspecified (Weiner, Perry, & Magnusson, 1988). When the mode of transmission was controllable (e.g., promiscuous sexual behavior) people felt more anger and less pity than when the mode of transmission was unspecified (Weiner, Perry, & Magnusson, 1988). When sexuality of the person was included the most anger and least amount of pity was reserved for homosexuals who contracted the virus through controllable means and the least amount of anger and greatest amount of pity was reserved for heterosexuals who acquired the virus through uncontrollable means (Mallery, 1990).

Responsibility for one's condition has played a role in whom and who does not receive assistance. People are less likely to provide personal assistance to persons with HIV/AIDS or donated to AIDS related charities than to those related to cancer, heart disease, Alzheimer's disease, etc. However, people were more likely to provide assistance and donate money to those (or charities) people who have contracted HIV/AIDS through uncontrollable means (e.g., blood transfusions, mother-to-child transmissions) (Weiner, Perry, & Magnusson, 1988). It should be noted, that even when AIDS has been acquired through uncontrollable means people were still more likely to help those with other diseases or conditions, suggesting that HIV/AIDS is inherently more stigmatizing than other diseases.

Concealable Stigma and Disclosure

Thanks to medical advances in the 1990s, HIV is now viewed as a chronic illness rather than a death sentence (at least for people in the West, but increasingly so in the developing world). HIV+ people who adhere to highly active antiretroviral treatment (HAART) have a comparable lifespan to the "average" person and often do not show

outward signs of the virus (e.g., lipodystrophy, Kaposi Sarcoma lesions) common in the early years of the epidemic. Thus, most HIV+ individuals can conceal their stigmatized identity fairly easily. People with concealable stigmas, such as HIV infection, typically have more control over when and to whom they choose to reveal their stigma compared to those who have readily apparent stigmatized identities (e.g., race, weight). This ability to control revealing stigma has both positive and negative consequences. On the one hand, being able to control the circumstances of revealing stigma allows people to preserve boundaries that allow them to have control of intimacy levels with other people (Derlega & Chaiken, 1977; Kelly & McKillop, 1996). Furthermore, they can choose to not reveal in situations (and to people) where they feel there will be negative repercussions such as prejudice. Some research has shown that people with concealable stigmas have better interactions with others than people with conspicuous stigmas (Jones et al., 1984). This may allow for smoother relations with acquaintances as they can often avoid prejudice associated with their stigmatized identity.

The trade-off is that people with concealable stigma have more problems with closer and less superficial relationships. Unlike a person with a conspicuous stigma, a person with a concealable stigma is faced with the dilemma of whether to reveal the stigma or keep it hidden. Deciding whether or not to reveal a stigmatized identity is often difficult because there are both positive and negative repercussions for concealing or revealing in these situations (Quinn, 2004). Some research suggests that disclosure is associated with greater liking of the discloser and more intimacy in the relationship (Collins & Miller, 1994). It is important to note timing of disclosure is important. Research has shown that if very personal details are revealed too soon in a relationship

people feel uncomfortable (Cozby, 1973). Conflicting research has shown revealing unsavory details about one's self can, sometimes, lead to negative responses from disclosure partners and alienation (Kelly & McKillop, 1996; Major et al., 1990).

Consequences of Disclosure and Non-Disclosure

The consequences of revealing HIV status are varied, similar to other stigmatized identities. Several benefits (to the discloser) for disclosure have garnered research-based support. Socially, disclosure has been shown as a good way to express thoughts and feelings, develop a better sense of self, and build intimacy within relationships (Derlega, Metts, Petronio, & Margulis, 1993; Jourard, 1971). A meta-analytic analysis of the effects of HIV disclosure found that overall disclosure was positively related to social support (Smith, Rossetto, & Peterson, 2008). Research has also shown that disclosure leads to the alleviation of the psychological and physiological stress of concealment (Alonzo & Reynolds, 1995).

Additionally, there have been health benefits associated with disclosure. Being able to disclose status to at least some close others has been associated with lower levels of depression (Mellins, Kang, Leu, Havens, & Chesney, 2003). Disclosure of HIV status has also been associated with better adherence to HAART regimen in part because the medication (usually) must be taken several times a day and it is difficult to conceal (Stirratt, Remien, Smith, Copeland, Dolezal, & Krieger, 2006; Wadell & Messeri, 2006). Higher levels of status concealment have also been associated with an accelerated progression to AIDS ($CD4s < 200$) (Cole, Kemeny, Taylor, Visscher, & Fahey, 1996). Lastly, concealment (of stigmatized identities in general) has been related to higher rates of cancer, and other infectious diseases (e.g., sinusitis) (Cole, Kemney, Taylor, &

Visser, 1996). These effects could be potentially exaggerated in persons with compromised immune systems due to HIV infection. It has also been shown that disclosure confidants may feel greater stress or worry as a result of disclosure or may feel the effects of associative stigma (Chaudior, Fisher, & Simoni, 2011; Goffman, 1963).

However, it should be cautioned that the aforesaid (personal) benefits of disclosure do not hold true for every situation or every person (or confidant) (Chaudior & Fisher, 2010). In addition, there are some negative outcomes to revealing HIV status. Research on sexuality has shown that “coming out” is often associated with hate crimes, harassment, and employment and housing discrimination (Herek, 2009). Given the extremely stigmatizing nature of HIV (and its connection to sexuality) it is not outrageous to infer that these negative outcomes could easily occur to someone who is HIV positive. Research has shown that when a disclosure confidant reacts negatively it can lead to higher levels of depression and alienation (Kelly & McKillop, 1996). Moreover, negative first time disclosure experience leads to a decreased likelihood of disclosure in the future and more negative reactions in the future (Quinn & Chaudior, 2010).

However, the benefits of disclosure for society at large are generally positive. Disclosure to sexual partners is associated with safer sex practices (Golden, Brewer, Kurth, Holmes & Handsfield, 2004; Klitzman et al., 2007; Simoni & Pantalone, 2004). Studies on MSM populations has shown that when one knows that a sexual partner is HIV positive they are more likely to use protection. In this same vein, disclosure to sexual partners is seen as overwhelmingly positive because it allows people to make an informed decision on sexual risk (Gorbach et al., 2004; Palmer, 2004).

Beyond potentially increasing safer sex practices there may be more benefits of disclosure to society at large. Disclosure also can lead to changes in what society knows about HIV or changes in the social dialogue surrounding the disease (Chaudior & Fisher, 2010). Chaudior (2011—invited presentation at Loyola University Chicago) argued that when Magic Johnson revealed his HIV status it led to greater dialogue about HIV (Kalichman & Hunter, 1992), and likely made others feel more comfortable disclosing their status and decreased the stigmatization of the disease (Penner & Fritzsche, 1993).

In addition research has shown that people who know someone with HIV are less prejudiced toward people with HIV than people who do not personally know someone with HIV (Chaudior & Fisher, 2010; Pryor & Reeder, 1993). This seems to suggest that knowing someone with HIV can serve to break down negative views and decrease stigma.

Factors Impacting the Decision to Disclose

Most of the literature on HIV status and disclosure deals with disclosure to sexual partners in the MSM community. Fewer studies, by comparison, examine disclosure to family and friends (Ssali et al., 2010). One study (Ssali et al., 2010) looking at women living with HIV in Uganda found that nearly 95% of the participants reported disclosing their status to someone. Eighty-four percent disclosed to their family members, 63 percent disclosed to their friends, and 21 percent to their co-workers (Ssali et al., 2010). The top two reasons women disclosed their status was to obtain social support and to strengthen relationships; however, some reported disclosing to explain changes in physical appearance related to HIV infection and to inform others about safe-sex practices. The women also feared negative repercussions of disclosure such as

abandonment and the desire not to worry the target of disclosure. From this research one can see that people generally do disclose to a variety of different people.

Fear of becoming the target of prejudice has also been shown to be related to the likelihood of disclosure. Some research has shown that the likelihood of disclosure is negatively correlated with perceptions of stigma. That is, people who perceive greater amount of stigma are less likely to disclose than people who have lower perceptions of stigma (Clark, Lindner, Armistead, & Austin, 2003). This is not surprising, given the severity of stigma related to HIV infection.

Internalized stigma, personal acceptance of stigma, and incorporation of stigma in self-concept (Herek, Gilis & Cogan, 2009) may also affect whether or not one chooses to disclose. Sayles et al. (2008) found that people who have higher levels of internalized stigma have more disclosure concerns. Lee, Kochman and Sikkema (2002) found that among other things people with higher levels of internalized stigma were less likely to attend support groups. Recently, Overstreet et al. (2012) found that higher levels of internalized stigma were negatively correlated with disclosure in African-American men who have sex with men (MSM).

Disease progression is another variable that has been examined in conjunction with the likelihood to disclose one's HIV status. Some research has suggested that illness stage is positively related to disclosure; that is, the longer someone has had HIV the more likely they are to disclose their status (e.g., Deribe, Woldemichael, Wondafrash, Haile, & Amberbir, 2008; Rosser et al., 2008; Zea et al., 2007). However, other research has shown that disease progression is not related to disclosure (Hays et al., 1993; Landau & York, 2004). According to Chaudior, Fisher, and Simoni (2011) this discrepancy can

likely be attributed to differences in the way “progression” was operationally defined. Those who defined “progression” as time since illness or symptomatic vs. asymptomatic (i.e., whether or not someone has opportunistic infections (OIs) or physical vestiges of HIV such as lipodystrophy) did not show a positive relationship between progression and disclosure. Studies that defined “progression” as personal acceptance of one’s HIV status and CD4 counts found a positive relationship between progression and likelihood of disclosure. Thus, it seems that acceptance is the variable that is related to disclosure.

Research has shown that the type of confidant has also been related disclosure. There is overwhelming empirical support to suggest that people are more comfortable revealing their serostatus when their confidant’s serostatus is known (e.g., King et al., 2008; Loubiere et al., 2009). The greatest likelihood of disclosure occurs when the confidant is known to be HIV positive as well (e.g., Bachmann et al., 2009; Niccolai, King, D’Entremont, & Pritchett, 2006).

The majority of studies show that people are more likely to disclose to close family members and friends as opposed to extended family members and acquaintances (e.g., Peretti-Watel, Spire, Pierret, Lert, & Obadia, 2006). When it comes to sexual partners the same pattern emerges: people are more likely to disclose to steady sexual partners as opposed to casual sexual partners (Batterham, Rice, & Rotheram-Borus, 2005; Rosengard, Anderson, & Stein, 2004). Research has shown that people are more likely to disclose to people that they share greater intimacy with. This has been shown for sexual partners (Marks & Crepaz, 2001) and for parents (Zea et al., 2004). Thus, research shows that people are more likely to disclose to people to whom they feel closer.

Quinn & Chaudoir (2010) have shown that the first disclosure event impacts the amount and quality of future disclosures. People are more likely to disclose when they have had positive disclosure experiences (in addition to other benefits more such as social support). In other words, a first disclosure experience begets more positive disclosure experiences, and a negative first disclosure experience begets negative disclosure experiences and fewer compared to those with positive first disclosures. A negative disclosure experience reinforces a person's fear of rejection and leads them to *avoid* future rejection by limiting opportunities for rejection (i.e., disclosure). Positive first disclosure has the opposite effect, and thus motivates a person to disclose more frequently in order to garner additional social support (Quinn & Chaudoir, 2010).

The aforementioned disclosure goals (avoidance of potential stigma or approach goals to gain support) have been shown to affect one's decisions. These studies which retrospectively asked participants to reveal their motives for disclosure found that goals for disclosure were related to likelihood of disclosure. Specifically, research has shown that those who had pro-disclosure goals (e.g., building social support, educating others) were more likely to disclose than people who had goals related to avoiding social rejection or stigmatization (Akani & Erhabor, 2006; Derlega et al., 2002, 2004; Serovich et al., 2008; Serovich & Mosack, 2003; Zea et al., 2007).

CHAPTER THREE

THE PROPOSED STUDY

The primary purpose of this project is to identify antecedent variables that influence what type of discloser an HIV+ person becomes. It builds from recent research by Stutterheim et al. (2011) showing that “full-disclosers”, defined as individuals who voluntarily disclose their HIV status to strangers and acquaintances as well as close friends and family, have comparable levels of self-esteem, psychological distress, and social support as “selective-disclosers” despite the fact that full-disclosers have significantly more stigmatizing experiences than “selective -disclosers.” In addition, the study seeks to provide additional evidence for the role of social support as a mediator between disclosure patterns (types of disclosers) and health and medical outcomes.

Previous research has shown that non-disclosure of concealable stigmatized identities (e.g., HIV serostatus) has negative implications on both medical and social well-being. Specifically, research by Cole et al. (1996) found that HIV+ men who concealed their sexual identity demonstrated a significantly more rapid disease progression than men who did not conceal their homosexuality. Stirrat et al. (2006) found disclosure of serostatus was related to adherence to antiretroviral medication where those who conceal their serostatus being less adherent to medication. While concealing a stigmatized identity has negative implications, being open about stigmatizing identity has documented drawbacks of its own; specifically people who are “out” about a stigmatizing

identity are more likely to be victims of discrimination or have more stigmatizing experiences. These experiences have been shown to have negative impacts on psychological well-being (e.g., Bing et al., 2001) and social relationships (Lee & Croft, 2002).

Since both concealment and openness are potentially harmful to an individual with a concealable stigmatized identity, advising an individual on disclosure decisions is complicated. Recent literature has shown that “selective disclosure” limits stigmatizing experiences while, presumably, decreasing the deleterious effects of complete concealment (Bos, Kanner, Muris, Janssen, & Mayor, 2009). Selective disclosure is promoted by non-academic HIV+ advocates; common advice posted on websites geared to the HIV+ community is to disclose status only to people who you believe will be supportive rather than full disclosure (e.g., The Poz at <http://www.poz.com>) . However, knowing who will be supportive is not always an easy task. Research has begun to shed light on the groups of people who are statistically more supportive and who thus are better disclosure partners (e.g., female relatives, people with known positive serostatus) see Arnold, Rice, Flannery, & Rotherham-Borus, 2008 for review).

Predictors of Disclosure

Quality of first disclosure experience is a variable that could potentially influence who becomes a non-discloser, a selective discloser, and a full-discloser. Chaudoir and Quinn (2010) found that people (with concealable stigmatized identities) who had more positive first disclosure experiences (i.e., the person they told was kind and supportive) reported disclosing more often than people who had negative first-disclosure experiences (i.e., the person they told was rejecting or angry). Therefore, it may be that full-disclosers

are simply people who had better initial experiences and are thus less fearful of disclosing their stigmatized identities than those who had more negative first-disclosure experiences. However, because Stutterheim et al. (2011) found that full-disclosers and selective-disclosers reported similar self-esteem scores, social support, and psychological distress, the overall quality of first disclosure experience may not be a predictor of the type of discloser one becomes, or there may be different qualities of the disclosure (and not the overall quality) that contributes to the type of discloser one becomes.

Internalized stigma is another variable that may possibly be another predictor of disclosure patterns. Longitudinal research has shown that stigma is negatively associated with disclosure to friends, family and sexual partners (Chaudoir, Fisher & Simoni, 2011). However, this is felt or anticipated stigma and not internalized sigma. A meta-analysis by Lee and Boyd (2010) found that mental health patients who had higher levels of internalized stigma experienced more depression and had lower self-esteem. Quinn & Chaudoir (2010) found the lower self-esteem was related to negative disclosure experiences. Sayles et al. (2008), who created a scale to measure the level of internalization of HIV-related stigma, found that higher levels of internalized stigma was related to higher levels of concerns about disclosure. It is possible that individuals with higher internalized stigma are less likely to disclose because they are more ashamed of their status and more fearful that others will reject them based on their HIV status than those with lower levels of internalized stigma. Very recent research supports this assumption. Overstreet et al. (2012) found that internalized stigma was related to fewer disclosures in HIV+ African-American MSM. More research is needed to determine whether this is general trend or true just for MSM African-American men who

experience higher levels of stigma than other groups due to both the additive nature of stigma and higher levels of stigma toward homosexuality and HIV within the Black community (for a review see Overstreet et al., 2012). Additionally, Lee, Kochman, and Sikkema (2002) found that people with internalized stigma were less likely to attend support groups which may indicate less disclosure. Additionally, they found that people with higher levels of internalized stigma were likely to have families that were less accepting of their HIV status. This is interesting because it *may* mean that people with internalized stigma are more likely to have negative first disclosure experiences, as their families are more rejecting than those who have lower levels of internalized stigma. It is reasonable to suggest, then, that quality of first disclosure experience and internalized stigma are negatively correlated.

Previous research has shown that non-disclosure of HIV status has had negative effects on one's social support and physical health. This study will extend beyond previous literature in several ways. First, it is the first study, to my knowledge, examining both internalized stigma and first disclosure experience influence on the type of discloser a person becomes. This study will also expand on Overstreet et al. (2012) in that the study will examine the effects on internalized HIV stigma on disclosure in a population beyond African-American homosexual males. Second, it is the first study to test the path from antecedent variables to health outcomes using a path analysis. Finally, this is the first study to my knowledge that will look at the relation of internalized stigma and first disclosure experience (see Figure 1 for the hypothesized model).

Hypotheses

1. Full disclosers will report a more positive first disclosure experience than selective disclosers. Both full disclosers and selective disclosers will report more positive first disclosure experiences than relative non-disclosers.
2. Internalized stigma will be highest among relative non-disclosers and lowest among full-disclosers with selective disclosers in between.
3. Social support will mediate the relationship between type of discloser and health outcomes. Full disclosers and selective disclosers will report higher levels of social support and better health than relative non-disclosers.
4. First disclosure experience and internalized stigma will be negatively correlated.

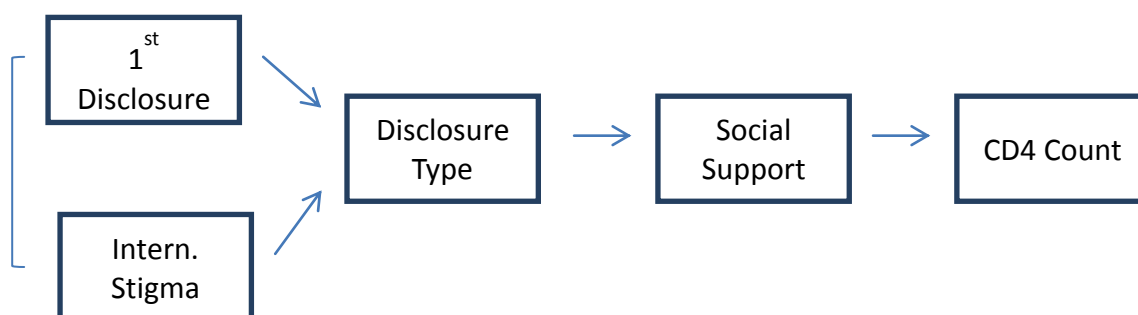


Figure 1. The hypothesized model.

Methods

Participants

A total of 96 HIV+ positive people participated in the survey¹ (age $M = 41$ years). The sample was 82% male. Almost two thirds (63.5%) of the sample identified as mostly to exclusively homosexual, 30% mostly to exclusively heterosexual, and 2% indented

¹ The original sample size was 126, but 30 participants had to be dropped due to large gaps in data and/or inability to provide a recent CD4 value.

as bisexual. The racial/ethnic distribution of the sample was 54% Caucasian, 29% African-American, 4% Latino/Hispanic, 3% Asian/Pacific Islander, 4% Biracial, 1% Native American. Half of the participants reported living above the poverty level. The education attainment distribution was 28% Bachelors Degree, 25% Associates Degree, 19% High School graduate or GED, 15% Advanced degree (e.g., MA, JD, MD, PhD), and 10% did not graduate high school. About one third of participants reported having an AIDS diagnosis and 84% of the sample reported taking medication for HIV (HAART). Sixty-six participants (68.8%) were recruited from several HIV-related Internet communities and websites and 30 (31.2%) of the total sample were recruited from an AIDS Service Organization (ASO) located in Chicago, IL. The Internet participants completed the survey online via Survey Monkey, and the AIDS service organization completed a paper version of the survey. Participants from the ASO, who took the survey via paper and pencil, were compensated with a \$10 Target gift card. The participants solicited from the various websites did not receive compensation.

Procedure

Participants will be allowed to participate via an online survey or a paper and pencil survey. Online survey was used to reach potential participants across world and would be the most convenient for those who have access to computers and the Internet. Paper surveys were used in order collect data who may not otherwise participate due to a lack of computer or Internet access.

Before the survey is administered participants were asked to read and sign the informed consent (either electronic or hardcopy depending on the mode they choose). Once the participants agreed to participate/complete the survey they answered questions

measuring each of the variables of interest as well as some demographic variables of the end. Once the survey has been completed the participants were debriefed and given the researcher's contact information in case they had any additional questions or experience any psychological discomfort as a result of the survey.

Measure/Variables

Type of discloser/amount of disclosure. Similar to Stutterheim et al. (2011) disclosure variables will be categorized as either private disclosure (i.e., to friends and family) or public disclosure (i.e., acquaintances and coworkers). For each group of people (i.e., family, friends, acquaintances, coworkers, and strangers) participants estimated the percentage of people they disclosed their status to in that group. The percentages participants could select were listed in five percent increments (e.g., 0, 5...95, 100). If a particular group of people did not apply to them (e.g., "coworkers" would not apply to unemployed, self-employed, or retired individuals) they were asked to leave the question blank (survey software did not allow for a N/A answer choice) (please see Appendix A for the entire measure). Participants were classified as relative non-disclosers if they told less than 50% of all groups. Selective disclosers were classified as those who disclosed to most of people close to them (more than 50% of both family and friends), but did not generally (less than 50%) disclose to people in public settings (e.g., acquaintances and coworkers). Full-disclosers were those who disclosed their status to most people in both private and public domains.

First disclosure experience. This section of the survey included questions about participants' first disclosure experience including identifying who they disclosed to (e.g.,

primary romantic partner, friend, family member, acquaintance, etc.) and the primary reason for the disclosure (e.g., to obtain moral support, out of moral obligation etc.).

Twelve items rating the first disclosure experience make up the measure for first disclosure experience. Two questions measure the overall experience: *How would you rate your first disclosure experience overall?* (1= Awful to 4= Very Good); and *How would you rate your first disclosure partner's response?* (1 = Very Negative to 4 = Very Positive). Ten questions ask about possible dimensions (e.g., caring, supportive, sad, judgmental, angry etc.) of the first disclosure partner's response. Instructions for this portion:

“Please rate your **FIRST** disclosure partner on the following dimensions. Please use the following scale: 1 = *Not at all*; 2 = *A little*; 3 = *Moderately*; 4 = *A great deal*.”

The score on the first disclosure measure was calculated by adding the responses of all 12 items with reversed scored items (e.g., judgmental, angry) recoded. Higher scores reflect more positive first disclosure experiences. This measure had acceptable level of internal reliability ($\alpha = .86$).

Internalized stigma. Sayles et al. (2008) developed and validated a scale used to measure HIV specific internalized stigma. The internalized stigma scale is composed of 28 total items and four subscales²: *Stereotypes* (12 items), *Disclosure concerns* (5 items), *Social relationships* (7 items), and *Self-acceptance* (4 items). Responses are on a four point scale: 0 = *none of the time*, 1 *some of the time*, 3 *most of the time*, and 4 *all of the time*. The overall measure is to be averaged across each subscale so one subscale is given more weight than another. The internal consistency for the overall scale is acceptable ($\alpha =$

² This scale was originally scored on a five point scale 0 = *None of the time*, 1 = *A little of the time*, 2 = *Some of the time*, 3 = *Most of the time*, and 4 = *All of the time*

.93). The internal consistency of each of the scales is: *Stereotypes* ($\alpha = .91$), *Disclosure concerns* ($\alpha = .85$), *Social relationships* ($\alpha = .89$), *Self-acceptance* ($\alpha = .66$).

Social support. Social support will be measured using the shortened version of Van Sonderen's (1993) Social Support List-Interactions (SSL-I). There are 12 total items in the shortened version (SSL12-I) (Van Eijk et al., 1994). The scale is comprised of three four-item subscales, *every day support*, *support in problem situations*, and *esteem support*. The measure asks participants to report how often the scenarios listed occur (e.g., *Does it ever happen to you that people invite you to dinner?*) on a four point scale where 1 = *seldom or never*, 2 = *now and then*, 3 = *regularly*, 4 = *very often*. The internal consistency of the entire scale is: (12 items) ($\alpha = .83$). The internal consistency of each of the scales is: *Every support* ($\alpha = .70$), *Support in problem situations* ($\alpha = .72$), *Esteem support* ($\alpha = .72$).

ARV adherence and health indicators. ARV (Anti-retroviral) medication adherence will be measured by asking participants how many doses of medication (if applicable) were prescribed to treat their HIV infection and how many they missed over the past two weeks to create an adherence percentage for each participant. Health indicators will be CD4 levels and presence and number of opportunistic infections (OIs). Participants will be asked to report their CD4 number at diagnosis and their current CD4 number and or trend (i.e., CD4 ranges over the past six months to a year). In terms of addressing OIs (e.g., Candidiasis, Pneumocystis carinii pneumonia, etc.) participants will be asked to report the presence and number of AIDS-defining OIs they have had over the past year.

Auxiliary variables. Six items were added to the questionnaire to capture experiences and feelings held by the participants. The purpose of the items was to provide possible contextualization for participants' responses on the variables central to the study (first disclosure experience, internalized stigma, type of discloser, social support, and CD4 count). One item assessed life satisfaction, *I am satisfied with my life*. One item assessed career outlook, *I am confident I can have the career I want*. One item assessed discrimination, *I am often the target of discrimination*. Three items assess participants' value on authenticity from the Authentic Living subscale on Wood et al. (2008) Authenticity Scale: *I think it is better to be yourself than to be popular*, *I always stand by what I believe in*, and *I am true to myself in most situations*. All items were measured on a seven point scale 1 = *Does not describe me at all* to 7 = *Describes me very well*. The authenticity items were averaged together for an average authenticity score used in the analyses.

Additionally, two questions addressed general disclosure experiences mirroring the overall first disclosure experiences, *How would you rate your disclosure experiences in general?* (1= Awful to 4= Very Good) and *How would you rate your disclosure partners' responses in general?* (1 = Very Negative to 4 = Very Positive).

Demographic variables. Standard demographic questions were included including age, gender, race, education and income. Income was operationalized as either *below poverty* or *above poverty*, in part because participants in the Internet communities had members outside of the U.S.A. The demographic portion of the survey asked about country and (U.S.) state of residence. The demographic portion of the questionnaire asked participants to report the following additional information: (1) month and year of

their diagnosis and (2) sexual preference, as both of these variables have been found to be related to disclosure. The Kinsey Measure of Sexual Orientation (Year) was used to collect sexual orientation. The Kinsey Measure asks participants to report their sexual orientation on a continuous scale ($0 = \textit{Heterosexual only with no homosexual encounters}$ to $6 = \textit{Homosexual with no heterosexual encounters}$) rather than a categorical scale.

Results and Analyses

Missing Data

Due to the limited sample size list-wise deletion was not a viable option for handling missing data. Below are descriptions of how missing data was handled for several different key variables.

Scaled items. Missing values on scaled items were imputed with the participant's mean score on a particular scale. Mean scores for each participant were computed using the valid responses the participant provided in the scale. This procedure was done for scaled variables central to the hypothesis: the Internalized Stigma Scale SSL12-I and the First Disclosure Scale.

Disclosure estimations and categorization. Everyone in the sample provided estimations of the number of *Family* and *Friends* (private domain) they disclosed to. Seven individuals included in the sample did not provide an estimate disclosure for *either* Coworkers or *Acquaintances* (public domain). Five individuals did not provide an estimation for *Coworkers* because that category was not applicable to them (i.e., they were unemployed or self-employed). Two participants did not provide an estimation for *Acquaintances* because they felt this category was not applicable to them (e.g., coworkers may have been their only acquaintances or they categorized most people unrelated to

them as either friends or strangers). In these cases, whether or not one categorized as a “public discloser” was determined only by the category for which they did provide an estimate. For example, if a person reported telling 70% of their acquaintances, but did not report an estimate for coworkers, they were categorized as one who discloses in public domains.

Recent CD4 estimates. Some participants did not provide their latest CD4 number. In seven cases, CD4 counts were estimated from their answers on the CD4 trend question on the survey. In every case the mid-point of the trend range was imputed as the current CD4 number. For example, if a participant reported that their CD4 trend was between 501 and 600, 550 was assigned as their most recent CD4 number. CD4 trend is a range of numbers where CD4 counts fall over a period of time, usually one to two years. Patients who have very unstable CD4 numbers due to recent HIV infection or non-adherence to medications would not have a trend. Participants who did not provide a recent CD4 number or CD4 trend were left out of the analyses.

Descriptive Statistics: Entire Sample

Overall participants first disclosed their HIV status to someone who was close to them as opposed to acquaintances or strangers. Nearly all participants reported first disclosing their status to someone in one of following categories: a friend (32%), a family member (31%), or their primary romantic partner (31%).

The most common reason for disclosure among survey respondents was to *obtain social/emotional support* (62%); 22% reported disclosing *out of moral obligation*, and 12% said they disclosed for some *other* reason. Only 2% of participants reported they first disclosed (or admitted) because someone found out or asked if they were HIV+.

Of the 96 participant sample, 66 were categorized as *relative non-disclosers*, 20 were categorized as *selective disclosers*, and 10 were categorized as *full disclosers*.

Fifteen participants reported having a visible indicator of HIV infection (or AIDS) such as lipodystrophy. Unlike Stutterheim et al. (2011), participants with a visible indicator or AIDS were not categorized separately; they were included in one of the aforementioned disclosure categories based upon their responses to the disclosure questions³. Table 1 displays descriptive statistics for the sample on the key research variables.

Table 1. Descriptive Statistics for Key Study Variables

	Sample Descriptives		Scale Characteristics	
	<i>M (SD)</i>	Median	Minimum Score	Maximum Score
First Disclosure Experience	36.58 (7.73)	38	12	48
Internalized Stigma	33.17 (14.66)	31	0	84
Social Support	33.02 (8.25)	33	12	48
CD4	600.35 (357.2)	539	0	--

The participants' average response on the First Disclosure Scale was greater than the median of the scale, this means participants had positive first disclosure experiences on average. Participant average response on the Internalized Stigma Scale indicated that on average participants endorsed items describing experiences or perceptions of stigma as *some of the time* a little less than the mean of the scale. On average participants endorsed items describing social support interactions (SSL12-I) just less than *regularly*; this is

³ Comparatively analyses showed that those with visible indicators of HIV did not differ from those who do not on any of the key variables. The only significant difference between these groups was age. Please see Appendix D for results of these analyses.

higher than the scale mean. The participants' average CD4 count was within the average "healthy" range (500-1000 cells/mm³) according to AIDS.gov. This suggests that participants, on average, are healthy in terms of their CD4 count.

Auxiliary variables. The descriptive statistics of the auxiliary variables show the participants in the sample were relatively satisfied with their lives and had a somewhat positive outlook on their careers. Overall participants reported good general disclosure experiences and placed a high value on authenticity. The majority of the participants reported they were *not often the target of discrimination*. The descriptive data suggests the sample is a generally a happy, positive group that is relatively unencumbered by HIV-related discrimination. Table 2 shows the descriptive statistics for the auxiliary variables.

Table 2. Descriptive Statistics for Auxiliary Study Variables

	Sample Descriptives			Scale Characteristics	
	n	<i>M (SD)</i>	Median	Minimum Score	Maximum Score
Life Satisfaction	96	5.03 (1.80)	5.50	1	7
Career Outlook	96	4.85 (2.08)	5.00	1	7
Discrimination Experienced	95	2.38 (1.61)	2.00	1	7
Authenticity Avg.	96	5.88 (1.49)	6.33	1	7
General Disclosure Avg.	93	3.00 (.74)	3.00	1	4

Mode of Survey Comparative Analyses

The following analyses examined differences between those participants who took the survey via the Internet and those who completed the survey on paper.

Demographic analyses. The subsamples differed vastly, in terms of their demographic compositions. Differences in age, level of education, income, gender distribution, racial distribution, and sexual orientation emerged between groups. Table 3 shows the comparisons for the continuous (or scaled) demographic variables and Table 4 shows comparisons for the categorical variables.

Table 3. Subsample Demographic Comparisons for Continuous Variables

	ASO	Internet	<i>df</i>	<i>T</i>
	<i>M(SD)</i>	<i>M(SD)</i>		
Age	46.29(1.40)	38.81(10.73)	58.8	3.25**
Education	2.17(.93)	3.64(1.13)	91	-6.11**

Note education is coded as 1 =Less than HS, 2=HS Grad, 3= Associates Degree, 4= BA/BS, 5=Adv. Degree⁴, 6= PhD, MD

**denotes p less than .05*

***denotes p less than .01*

As depicted in Table 3, participants from the ASO group were significantly older than those in the Internet group. Additionally, participants from the Internet group attained a significantly higher level of education than those in the ASO group. The average participant in the Internet group had (approximately) a four-year college degree whereas the average ASO participant had a high school diploma or GED.

⁴ MA/MS/MBA or JD

Table 4. Subsample Demographic Comparisons for Categorical Variables

	ASO	Internet	N(df)	χ^2
	Count (%)	Count (%)		
Gender			93(1)	12.71**
Female	11(37.9)	5(7.8)		
Male	18(62.1)	59 (92.2)		
Race			80(1)	48.39**
Afr. American	22(78.6)	6(10.7)		
Caucasian	2(8.3)	50(96.2)		
Sexual Orientation			93 (2)	21.53**
Heterosexual	17(60.7)	13(20)		
Homosexual	9 (32.1)	52(80)		
Bisexual	2 (7.1)	0 (0)		
Income			88(1)	26.42**
Above Poverty	3(12.5)	47(73.4)		
Below Poverty	21(87.5)	17(26.6)		

*Denotes significance at less than .05

** Denotes significance at less than .01

As seen in Table 4, participants in the Chicago based ASO were significantly more likely to report living below the poverty level than those in the Internet group

The gender composition differed significantly between the ASO and Internet groups. While men were the majority of both groups, women made up a larger percentage (37.9%) of the ASO than the Internet group (7.8%).

The modes of survey differed significantly in terms of racial composition. The majority of participants recruited from the Chicago-based ASO were African-American whereas the majority of participants recruited from Internet websites were Caucasian.⁵

The modes of survey differed significantly in terms of distribution of sexual orientation. The majority of participants recruited from the Chicago-based ASO identified as heterosexual (60.7%); homosexuals and bisexuals made up 32.1% and 7.1%

⁵ This analysis compared only African-American and Caucasian participants as they made up 83% of the total sample.

of the ASO group, respectively. Comparatively, 80% of participants in the Internet group identified as homosexual and 20% participants identified as being heterosexual and no one in the Internet group reported being bisexual

Research variable analyses. In addition to demographic differences, the subsamples differed on two primary research variables: internalized stigma and social support. ASO participants reported significantly lower levels of internalized stigma than participants in the Internet group. Additionally, participants in the ASO group reported significantly higher social support scores than participants in the Internet group. Table 5 displays the subsample comparisons on each the key continuous research variables.

Table 5. Subsample Comparisons on Key Study Variables

	ASO (n=30)	Internet (n=66)	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i> (95)
First Disclosure Experience	35.87(7.50)	36.90(7.87)	ns
Internalized Stigma	28.83(13.11)	35.18(14.98)	-1.99*
Social Support	36.84(8.27)	31.28(7.68)	3.21**
CD4 Count	553.6(238.49)	621.60(399.54)	ns

The distribution of discloser types did not differ between subsamples. Table 6 displays the number and percentage of discloser type by subsample. Relative non-disclosers make up the majority of both subsamples followed by selective disclosers and both groups consisted of very few full disclosers.

Table 6. Number and Percentage of Type of Discloser by Subsample

		ASO	Internet	Total
Relative Non-Discloser	Count	21	45	66
	% Sub-sample	70	68.2	--
	% Total	21.9	46.9	68.8
Selective Discloser	Count	7	13	20
	% Sub-sample	23.3	19.7	--
	% Total	7.3	13.5	20.8
Full Discloser	Count	2	8	10
	% Sub-sample	6.7	12.1	--
	% Total	2.1	8.3	10.4
Total	Count	30	66	96
	% Sub-sample	100	100	100
	% Total	31.2	68.8	100

Auxiliary variable analyses. Table 7 shows subsample comparisons on the auxiliary variables. Results show that sub-groups are similar on most auxiliary variables. However, the ASO sub-group reported significantly greater life satisfaction than the Internet subsample. Additionally, a marginally significant result emerged for career outlook. Participants in the ASO group reported greater confidence in attaining the career they want than the Internet group.

Table 7. Subsample Comparisons on Auxiliary Variables

	ASO (n=30)	Internet (n=66)	<i>t-test</i>
	<i>M(SD)</i>	<i>M(SD)</i>	
Life Satisfaction	5.67(1.71)	4.74(1.78)	2.38*
Target of Discrimination	2.00(1.29)	2.55(1.72)	Ns
Career Outlook	5.43(1.85)	4.59(2.13)	Ns
Authenticity Avg.	5.67(1.37)	5.98(.91)	ns
Gen. Disclosure Avg.	3.12(.80)	2.95(.72)	ns

* denotes significance at .05

Disclosure Group Comparative Analyses

Demographic analyses. Overall the disclosure groups did not vary on demographic variables. Table 8 exhibits comparisons of continuous demographic variables between disclosure groups. Table 9 displays comparisons of categorical demographic variables between disclosure groups.

Table 8. Disclosure Group Demographic Comparisons for Continuous Variables

	Relative Non-discloser	Selective Discloser	Full Discloser	<i>df</i>	<i>F</i>
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>		
Age	39.84(1.40)	45.11(10.73)	41.30(8.12)	2,89	Ns
Education	3.36(14.26)	2.89(1.24)	3.00(1.33)	2,90	Ns

Note education is coded as 1 = Less than HS, 2 = HS Grad, 3 = Associates Degree, 4 = BA/BS, 5 = Adv. Degree⁶, 6 = PhD, MD

Age or education level did not differ between disclosure groups. The mean approximate age distribution was between 40 and 45 years for each group, with a similar level of educational attainment, approximately an Associate's Degree.

⁶ MA/MS/MBA or JD

Table 9. Disclosure Group Demographic Comparisons for Categorical Variables

	Relative Non-discloser	Selective Discloser	Full Discloser	N(df)	χ^2
	Count (%)	Count (%)	Count(%)		
Gender				93(2)	ns
Female	11(17.2)	4(21.1)	1(10.8)		
Male	53(82.8)	15(78.9)	9(90.0)		
Race				80(1)	ns
Afr. American	20(37.7)	7(38.9)	1(11.1)		
Caucasian	33(62.3)	11(61.1)	8(88.9)		
Sexual Orientation				93(4)	ns
Heterosexual	22(34.4)	6(31.6)	2(20.0)		
Homosexual	40(62.5)	13(68.4)	8(80)		
Bisexual	2 (3.1)	0 (0)	0(0)		
Income				88(2)	ns
Above Poverty	39(65.0)	6(66.7)	5(50)		
Below Poverty	21(35.0)	12(33.3)	5(50)		

Table 9 breaks down the variables of each disclosure category. Relative non-disclosers, selective-disclosers and full disclosers did not differ on any demographic variables.

Research variable analyses. One-way ANOVAs were conducted to compare the disclosure categories (relative non-discloser, selective discloser, and full discloser) on the key research variables. Results of all ANOVAs are included in Table 10 below.

Table 10. Disclosure Group Comparisons on Key Study Variables

	Relative Non-discloser	Selective Discloser	Full Discloser	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>F</i> (2,93)
First Disclosure Experience	36.36(8.02)	38.1(6.81)	35.04(7.74)	ns
Internalized Stigma	36.88(14.26)	25.50(13.31)	24.34(10.40)	7.58**
Social Support	31.68(8.00)	36.60(8.02)	34.72(8.66)	3.11*
CD4 Count	620.67(393.64)	561.40(281.31)	544.20(225.19)	ns

* denotes significance at .05

**denotes significance at .01

Hypothesis one was not supported as first disclosure experience did not differ significantly between groups as predicted; full-disclosers did not report the most positive first disclosure experiences nor did relative disclosers report the least positive first disclosure experiences, as predicted.

There was a significant difference between disclosure groups on internalized stigma scores. Post hoc comparisons using the Tukey HSD test indicated that the mean internalized stigma score for the relative non-disclosers ($M = 36.88$) was significantly higher than both selective disclosers ($M=25.5$) and full disclosers ($M= 24.34$). Selective disclosers and full disclosers did not differ significantly on internalized stigma scores. The results provide partial support for *hypothesis two*: relative non-disclosers have the highest level of internalized stigma as predicted but selective disclosers and full-disclosers did not differ significantly as was originally predicted.

Additionally, a significant difference was found between disclosure groups on social support. Post hoc comparisons using the Tukey HSD test indicated that the mean social support score for selective disclosers ($M = 36.60$) was significantly greater than relative non-discloser than both selective disclosers ($M=31.68$). Full disclosers levels of social support ($M= 34.72$) did not differ significantly from either selective disclosers or relative non- disclosers. The pattern of social support did not align with the original prediction. While relative non-disclosers had the lowest levels of social support as anticipated, selective disclosers reported the highest mean levels of social support rather than full disclosers. However it is important to note social support scores did not differ significantly between selective and full disclosers.

Auxiliary variable analyses. Results of the ANOVA analyses for the auxiliary variables reveal one significant difference and one marginally significant difference between disclosure groups. Table 11 displays means and test statistics for each of the auxiliary variables by each disclosure category.

Table 11. Disclosure Group Comparisons on Auxiliary Study Variable

	Relative Non-discloser	Selective Discloser	Full Discloser		
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>df</i>	<i>F</i>
Life Satisfaction	4.82(1.72)	5.80(1.96)	4.90(1.80)	(2,93)	2.37†
Authenticity Avg.	5.70(1.70)	6.37(.74)	6.07(.68)	(2,93)	3.19*
General Disclosure Avg.	2.98(.76)	3.22(.66)	2.72(.17)	(2,90)	ns

* denotes significant at .05

† denotes marginal significance

As Table 11 shows, there was a significant difference between disclosure groups on the authenticity variable. Post hoc comparisons using the Tukey HSD test indicated that the mean life satisfaction score for the relative non-disclosers ($M = 5.70$) was the lowest among the three disclosure groups and significantly lower than selective disclosers ($M = 6.37$). Selective disclosers and full disclosers ($M = 6.07$) did not differ significantly on the authenticity variable. This finding suggests that relative non-disclosers place lower value on being authentic than do selective disclosers.

Additionally, a marginally significant difference on life satisfaction scores was found between disclosure groups. Post hoc comparisons using the Tukey HSD test showed a pattern similar to the authenticity variable previously reported. Relative non-disclosers had the lowest mean life satisfaction scores of the three disclosure groups.

Relative non-disclosers life satisfaction mean score ($M=4.82$) differed (marginally) from selective disclosers ($M=5.80$). Full disclosers mean life satisfaction scores ($M=4.90$) did not differ significantly from either selective disclosers or relative non-disclosers. This result suggests that selective disclosers may have the greatest life satisfaction.

Path Analysis

Structural Equation Modeling (SEM) was employed to test the hypothesized model and the strength and direction of each parameter or path coefficient. According to Garson⁷, path analysis is an extension of the regression model where a researcher can compare two or more causal models to test which model best fits the correlation matrix. A regression is done for each dependent variable in the model that is predicted by other variables in the model (as denoted by one-way arrows). The proposed model (see Figure 1) consists of four regressions and a correlation (signified by the double-headed arrow or here as a semi-circle connecting first disclosure experience and internalized stigma).

The model predicted that first disclosure experience would predict the type of disclosure one becomes, specifically more positive first disclosure experiences would be related to more disclosures. In other words, full disclosers were predicted to have the most favorable disclosure experiences and relative non-disclosers were expected to have the least positive disclosure experiences. Internalized stigma was predicted to be negatively related to disclosure type, meaning that the more internalized stigma a person reported the fewer disclosures they were expected to have. Thus, full disclosers were predicted to have the lowest levels of internalized stigma and relative non-disclosers were

⁷ Garson, D. *Path Analysis.[Pdf document]*. Retrieved from: <http://tiny.cc/0exjgx>.

predicted to have the highest levels of internalized stigma. Additionally, it was predicted that internalized stigma and first disclosure experience would be negatively correlated.

Type of discloser was expected to predict social support. Specifically, relative non-disclosers were expected to have the lowest levels of social support and selective disclosers and full disclosers were expected to have significantly higher, but comparable, levels of social support. Previous analyses on discloser type and key study variables revealed that selective disclosers had significantly higher levels of social support than relative non-disclosers, but full disclosers did not differ significantly from either group.

Finally, social support was hypothesized to fully mediate the relationship between discloser type and CD4 (t-cell) count, a key health outcome. Specifically, it was anticipated that selective disclosers and full disclosers would have greater social support and increased social support would be related to better health outcomes (i.e., higher CD4 count) compared to relative non-disclosers.

The path analysis was analyzed using Lisrel 8 SEM software (Joreskog & Sorbom). It should be noted that Lisrel cannot accommodate ordinal variables (such as disclosure type in this model) (Joreskog, 2004) and disclosure type (on the 0 to 2 scale) is treated as a continuous variable in this model. Violation of this assumption (that all variables in a path analysis are continuous) leads to inflated levels of model fit but does *not* affect parameter estimates in the model. Thus, parameter estimates can be interpreted with confidence whereas model fit indices must be interpreted with caution (please see Appendix B for an alternative piecemeal analysis of the model using ordinal regression to treat disclosure category as an ordinal variable). Figure 2 shows the path model with unstandardized path coefficients for each estimated parameter.

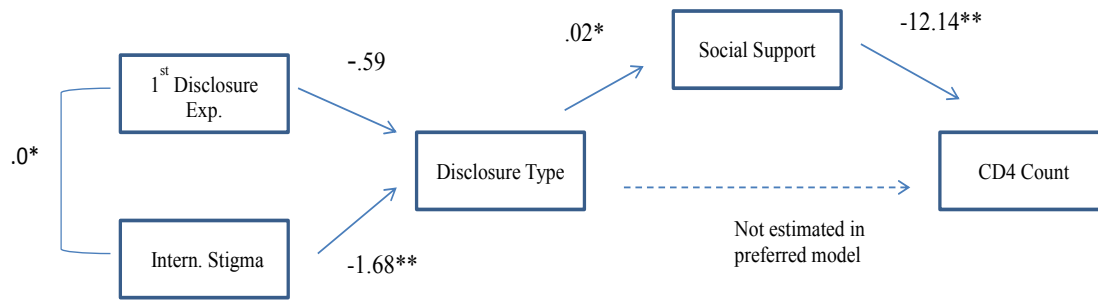


Figure 2. Preferred path model with unstandardized path coefficients (N=96).

* Denotes significant at .05 and **denotes significant at .01.

The path model reveals several significant parameters. Table 12 provides the maximum likelihood parameter estimates for each parameter in the model.

Table 12. Maximum Likelihood Parameter Estimates for Path Model

Parameter	Unstandardized	SE	Standardized
Direct effects			
1 st Disclose → Disclosure Type	-.59	.01	-.07
Intern. Stigma → Disclosure Type	-1.68**	.45	-.36
Disclosure Type → Social Support	.02*	.01	.20
Social Support → CD4 Count	-12.14**	4.31	-.28
Disclosure Type → CD4 Count ¹	-.44	.55	--
Covariance			
First Disclosure U Intern. Stigma	.00*	.00	-.18

¹ The direct effect was not estimated as part of model, but the unstandardized coefficient was estimated as part of the modification index.

* denotes significant at .05

* denotes significant .01

The path model and table above shows several significant parameters or path coefficients in the model. Three of the significant parameter estimates supported the research hypothesis. First, internalized stigma does significantly predict disclosure type in

the hypothesized direction.⁸ Specifically, high scores on internalized stigma were significantly related to fewer disclosures (or disclosure category). The unstandardized value suggests that a point increase on the Internalized Stigma Scale relates to a 1.68 decrease in disclosure type, when controlling for first disclosure experience. Second, disclosure type was found to be significantly related to social support in the predicted direction. The analysis suggests that those who disclose more have higher levels of social support: a one point increase in discloser type is associated with a .02 increase on social support scores. Finally, first disclosure experience and internalized stigma scores were significantly negatively correlated as hypothesized.

Results revealed social support scores significantly predicted participant CD4 counts. However, the results show the relationship is significant in the opposite direction than hypothesized. In other words, higher levels of social support significantly predicted lower CD4 counters rather than higher CD4 counts (i.e., those with greater social support were in worse health (comparatively) than those reporting lower levels of social support). The unstandardized parameters imply a one point increase in social support is related to a 12.14 decrease in CD4 count. Social support did fully mediate the relationship between disclosure type and CD4 count, but not in the way originally hypothesized.

Contrary to the original hypothesis first disclosure experience did not significantly predict the type of discloser a person becomes. Additionally, the relationship (while not significant) was in the opposite direction of the prediction, suggesting more positive first disclosure experiences are associated with fewer, rather than more, disclosure experiences. *It is important to note that the findings are largely based on the differences*

⁸ Relation between internalized stigma subscales on disclosure type were analyzed in Appendix D

between relative non-disclosers and selective disclosers due to the relatively low number of full disclosers in the sample.

Goodness of fit. Different indices are used to measure the goodness of fit. Recent research (Boomsam, 2000; Kline, 2005; McDonald & Ho, 2002) recommends reporting the following fit statistics when evaluating model fit: the model chi-square, the Steiger-Lind root mean square error of approximation (RMSEA; Steiger, 1990), the Bentler comparative fit index (CFI; Bentler, 1990), and the standardized root mean square residual (SRMR). Table 13 displays the fit indices for the disclosure factors path model.

Value indices indicate the average overall fit of the model. This means that while the Goodness of Fit values are acceptable, some parameters may fit the data poorly. Furthermore, fit indices do not mean the results are theoretically meaningful (e.g., a model can fit the data well but some parameters may be related in ways that were not hypothesized) (Kline, 2005).

Table 13. Goodness of Fit Indices for Disclosure Model

Fit Index	Acceptable Fit	Model Value	Determination
Model χ^2	Low χ^2 relative to df with an insignificant p-values ($p > .05$)	$\chi^2(5) = 4.99, p = .41$	Acceptable/good fit
RMSEA	Values $< .07$ = acceptable fit ⁹ ; Values $< .03$ = excellent fit	0; CI (0; .14)	Somewhere from excellent (0) to unacceptable fit (.14)
CFI	Values $> .95$	1.00	Acceptable fit
SRMR	Values $< .08$ ¹⁰	.05	Acceptable fit

⁹ This value of acceptable fit was determined by Steiger, 2007.

¹⁰ This value of acceptable fit was established by Hu & Bentler, 1999

While goodness of fit statistics must be interpreted with caution as previously stated, the disclosure model proposed in this study does acceptably fit the data by the standards of most indices reported. The chi-square value is often described as the “badness-of-fit” index because the higher the value the worse the model fits the data. A perfectly fitting model would have $\chi^2 = 0$ with zero degrees of freedom, meaning the predicted correlation covariances equal the observed covariances (Kline, 2005). Thus, a $\chi^2 (5) = 4.99$ and a non-significant p-value suggests the model fits the data reasonably well.

Like the χ^2 , RMSEA is a “badness-of-fit” index. It tells us how well the model with unknown (but optimally chosen) parameter estimates fits the covariance matrix of the sample (Bryne, 1998). Therefore, lower values indicate the model is a reasonable approximation of reality than higher values. Due to sampling error with RMSEA researchers are encouraged to evaluate the model based on the upper bound of the 90% confidence interval (Kline, 2005). Based upon the upper bound of the confidence interval this model would *not* be considered an acceptable fit to the data.

The CFI is a comparative fit index that compares the research with the null model to evaluate how much the research model improves upon the null model (Kline, 2005). The null model assumes that none of the parameters are correlated with one another. The CFI takes sample size into account and is regarded as a good fit index for small sample sizes, similar to this survey sample. The values for this statistic range from 0 to 1.0 with larger values indicating better fit. The disclosure model exceeds .95—the threshold for acceptable fit—thus the disclosure model has good/acceptable fit by CFI standards.

The SRMR evaluates the difference between the standardized square root of the difference between the residuals of the sample covariance matrix and the hypothesized

covariance model (Hooper, Coughlan, & Mullen, 2008). Like the χ^2 and RMSEA, SRMR is a “badness-of-fit” index. Values on the SRMR range from 0 to 1 with lower values indicating better fit and values $\leq .05$ indicating acceptable fit. According to the SRMR, the disclosure does achieve acceptable fit.

Model modifications. Lisrel produces model modification indices when specified in the syntax. This function estimates parameters that were not specified (freed) in the model. The output shows that there is not a significant direct effect of disclosure category on CD4 count.

Path Analysis by Subsample (Internet and ASO)

Previous analyses revealed significant and possibly meaningful differences between the subsamples (ASO vs. Internet). For these reasons we thought it was pertinent to test the model on each of the subsamples. The sample sizes for the subsamples are quite low: 30 and 66 for the ASO and Internet groups, respectively. For this reason the analyses in this section are *exploratory* and the results are meant to be viewed with an eye toward future research and *not* as generalizable to HIV+ populations with similar characteristics.

Internet subsample. Lisrel was used to test the model on the data derived from Internet participants. There are only 66 participants in the Internet subsample and the low sample size is likely to attenuate any possible significant parameter estimates in the model. Figure 3 depicts the disclosure model with data from the Internet subsample.

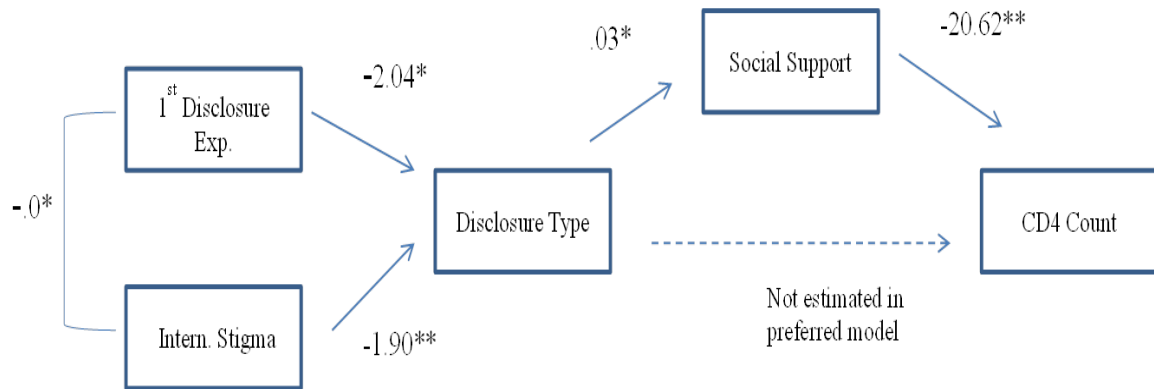


Figure 3. Internet path model with unstandardized path coefficients (N=66).

* Denotes significant at .05 and **denotes significant at .01

Table 14. Maximum Likelihood Parameter Estimates for Path Model: Internet Sample

Parameter	Unstandardized	SE	Standardized
Direct effects			
1 st Disclose → Disclosure Type	-2.04*	1.06	-.23
Intern. Stigma → Disclosure Type	-1.90**	.56	-.40
Disclosure Type → Social Support	.03*	.01	.25
Social Support → CD4 Count	-20.28**	6.03	-.40
Covariance			
First Disclosure U Intern. Stigma	.00*	.00	-.25

The path model and table above show all the path coefficients in the model are significant. Three of the significant parameter estimates supported the original research hypotheses. First, internalized stigma does significantly predict disclosure type in the hypothesized direction just as with the total sample. The unstandardized coefficient indicates for a point increase on the Internalized Stigma Scale relates to a 1.90 decrease in disclosure type when controlling for first disclosure experience. Second, disclosure type was found to be significantly related to social support in the predicted direction. The analysis suggests that those who disclose more (in a higher disclosure category) have

higher levels of social support. A one point increase in disclosure type is associated with a .03 increase on social support scores. Finally, first disclosure experience and internalized stigma scores were significantly negatively correlated as hypothesized.

Additionally, the results of the path analysis revealed social support scores significantly predicted participant CD4 counts. However, the results reveal the relation between social support and CD4 counts are opposite of the original prediction. In other words, higher levels of social support significantly predicted lower CD4 counts rather than higher CD4 counts (i.e., those with greater social support were in worse health (comparatively) than those reporting lower levels of social support). The unstandardized parameters imply a one point increase in social support is related to a 20.62 decrease in CD4 count. Again, social support does fully mediate the relationship between disclosure type and CD4 count, but the pattern of results is different from the hypothesis.

First disclosure experience did significantly predict disclosure type, but the results revealed a relationship that was opposite of the original prediction. The results imply that more positive first disclosure experiences are associated with fewer, rather than more, disclosure experiences.

Goodness of fit. Table 15 shows the goodness of fit statistics for the Internet subsample. Just as with the total sample the model has an acceptable fit by the standards of most fit indices (please see previous section for discussion about each fit statistic listed below). Additionally, it should be mentioned that most fit indices are unreliable with very small or very large sample sizes (Kline, 2005). As previously mentioned, these statistics should be interpreted with extreme caution: subsample analyses should be viewed as exploratory only.

Table 15. Goodness of Fit Statistics for the Internet Subsample

Fit Index	Acceptable Fit	Model Value	Determination
Model χ^2	Low χ^2 relative to df with an insignificant p-values ($p > .05$)	$\chi^2(5) = 2.66, p = .75$	Acceptable/good fit
RMSEA	Values $< .07$ = acceptable fit ¹¹ ; Values $< .03$ = excellent fit	0; CI (0; .12)	Somewhere from excellent (0) to unacceptable fit (.12)
CFI	Values $> .95$	1.00	Acceptable fit
SRMR	Values $< .08$ ¹²	.047	Acceptable fit

ASO subsample analysis. Due to the very low sample size ($n = 30$) the path analysis for the ASO could not be conducted using Lisrel 8 statistical software. The “path analysis” for this group was conducted in a piecemeal fashion. Ordinal regression was used to examine the relationship between first disclosure experience, internalized stigma, and disclosure type (Step 1). *Indirect* macro (Preacher & Hayes, 2008) was employed to test whether social support mediates the relationship between discloser type and CD4 count (Step 2). Figure 4 shows the first step of the analysis using the unstandardized coefficients from the ordinal regression.

¹¹ This value of acceptable fit was determined by Steiger, 2007.

¹² This value of acceptable fit was established by Hu & Bentler, 1999

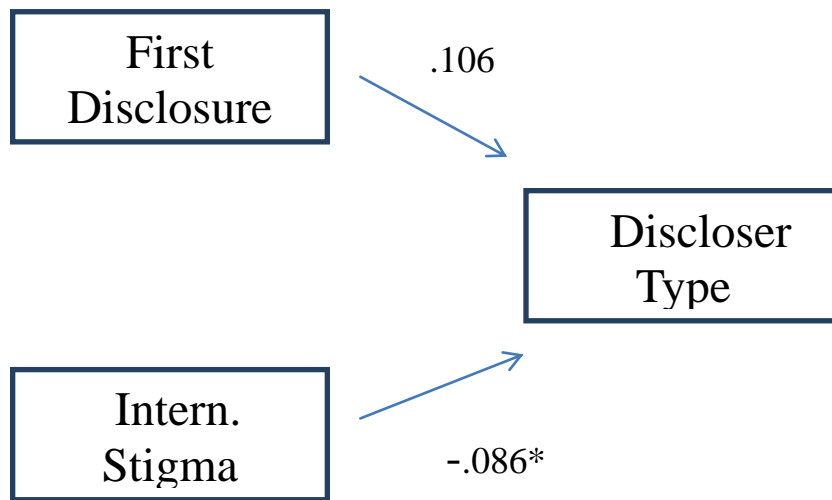


Figure 4. Step one of piecemeal path analysis: ASO subsample.

The results of step one of the analysis reveal that, like the total sample and the Internet subsample, internalized stigma significantly predicts the type of discloser one becomes. The ordered log odds estimate indicates that for every one point increase in internalized stigma a participant's log odds of being in a higher disclosure group would decrease by .086 while the other variables in the model (i.e., first disclosure experience) are held constant. The relation between disclosure experience and type of discloser was not found to be significant. However, the sign of the coefficient suggests that the relationship between first disclosure experience and type of discloser is positive, in line with the research hypothesis that more positive first disclosure experiences are associated with occupancy in higher disclosure group (i.e., greater disclosure). A separate analysis revealed that first disclosure experience and internalized stigma were not correlated, as originally hypothesized, $r(30) = -.066, p = .73$

Table 16 provides the parameter estimates, odds ratio, and fit statistics for the first step of the model.

Table 16. Unstandardized Coefficients, Odds Ratios, and Fit Indices for ASO Subsample

Independent Variables	Coefficient	Odds Ratio
First Disclosure Experience	.074†	1.11
Intern. Stigma	-.069**	.92
Model Fit	Test Value (df)	p-value
-2 log likelihood X^2	10.55(2)	.005
Pseudo R^2	Value	
Cox and Snell	.29	
Nagelkerke	.38	

†p = .15

**p < .01

The likelihood ratio chi-square compares the present model with the null model (a model where none of the predictors is significant = 0). The significance value is the probability of obtaining a chi-square value (in this case 10.55) with a model where none of the predictors differed from zero. The model fits well; by this fit standard the value implies there is only a .5% chance that neither of the predictors differed from zero. In other words, there is a 99.5% chance that at least one of the predictors differs from zero.

The pseudo R^2 values are an approximation for the amount of variances that is explained by the model. Values for the pseudo R^2 range from 0 to 1 where higher values indicate a better fitting model than lower values. Table 17 shows that the model explains .29 and .38 of the variance on the Cox and Snell and Nagelkerke, respectively.

Step two of the piecemeal analysis tests the hypothesis that social support fully mediates the relation between type of discloser and CD4 count in the ASO sample. The *Indirect* macro developed by Preacher and Hayes (2008) was utilized to test this hypothesis. Figure 5 shows the results of the mediation analysis with coefficients for each path.

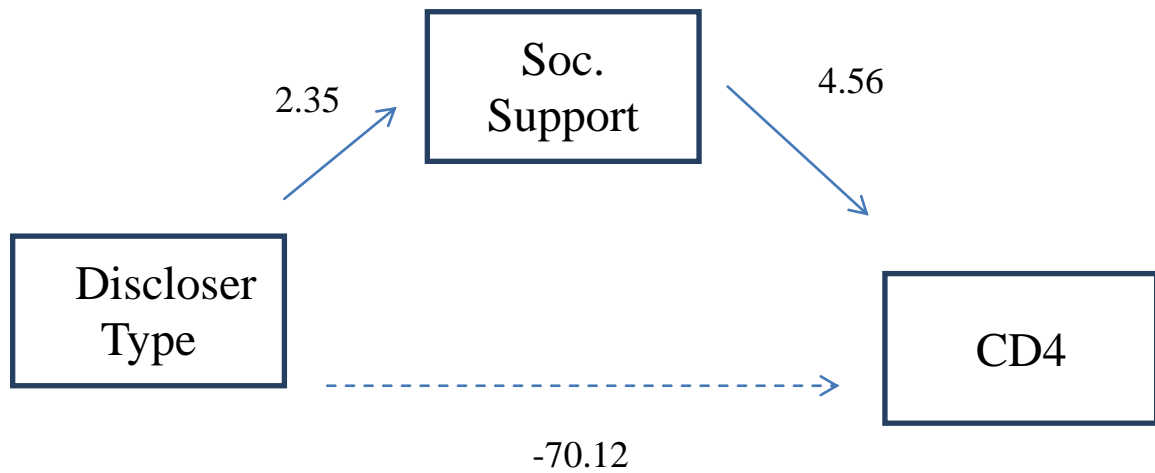


Figure 5. Step two of piecemeal analysis: ASO subsample.

None of the parameters (or paths) in the mediational analysis were significant.

This is not particularly surprising given the low sample size. The path coefficients shown above (path a and b), while not significant, are trending in the direction predicted in the hypothesis. Table 17 provides the path coefficients and values.

Table 17. Path Coefficients for the ASO Mediational Analysis

Path	Coefficient	se	<i>t</i>	<i>p</i>
Discloser Type → Social Support (a)	2.35	2.50	.94	.36
Social Support → CD4 Count (b)	4.56	5.49	.83	.41
Discloser Type → CD4 Count (c)	-59.41	72.43	-.82	.42
Discloser Type → CD4 Count (c')	-70.13	73.97	-.95	.52
	R^2	Adj. R^2	$F(2,27)$	<i>P</i>
Model Summary	.05	-.023	.68	.52

Discussion

The purpose of this study was to examine factors that may impact the type of HIV status discloser one becomes. Specifically, this study examined the role of first disclosure experience and internalized stigma in predicting the type of discloser a person becomes. Participants with more positive first disclosure experiences were predicted to disclose more often (or be in a higher disclosure category) compared to participants reporting less positive first disclosure experiences. It was anticipated that full disclosers would have the most positive first disclosure experiences followed by selective and relative non-disclosers, respectively. It was hypothesized that internalized stigma would be negatively related to the type of discloser one becomes. In other words, higher scores on the internalized stigma would predict fewer disclosures than lower scores on the measure. Moreover, it was predicted that full disclosers would have the lowest internalized stigma scores, selective disclosers would have intermediate internalized stigma scores, and relative non-disclosers would report the highest internalized stigma scores. Furthermore, it was hypothesized that first disclosure experience scores and internalized stigma scores would be negatively correlated.

In addition to the aforementioned hypotheses, this study sought to examine whether social support fully mediated the relationship between type of discloser and CD4 count, a indicator central for evaluating the health of HIV+ people. In particular, those who disclosed more often (those in a higher disclosure category) were predicted to have higher levels of social support than those who disclosed less often (those in a lower disclosure category). Participants who reported more social support were hypothesized to have a higher CD4 count (better health) compared to those reporting lower levels of

social support. A significant direct relationship between discloser type and CD4 count was not anticipated (or predicted) based upon previous literature.

Results of analysis of variance (ANOVA) comparing discloser categories and SEM path analyses provided support or partial support for some of the aforementioned hypotheses. First, internalized stigma was found to be negatively related to disclosure. Specifically, participants with higher internalized stigma scores were found to disclose less often (in a lower disclosure category) than those who had lower internalized stigma scores. These findings support previous research by Clark, Lindner, Armistead, & Austin (2003) who found that people who perceive greater amounts of stigma are less likely to disclose than those who perceive lower amounts of stigma. The results of the current study also extend upon research conducted by Overstreet et al. (2008) that found that higher levels of internalized stigma were negatively correlated with disclosure in African-American men who have sex with men (MSM). Results from the current study provide additional evidence that internalized stigma is negatively related to disclosure and suggest this effect can be extended beyond African-American MSM to the larger HIV+ community.

While the results revealed the relationship between internalized stigma and disclosure type was significant in the predicted direction, results of the ANOVA revealed the pattern of internalized stigma by discloser type was not exactly as initially predicted. As hypothesized, relative non-disclosers did have the highest mean level of internalized stigma, but selective disclosers, not full disclosers, had the lowest levels of internalized stigma. It is impossible to ascertain from the data whether there is a difference between full disclosers and the other two groups on internalized stigma due the low number of full

disclosers in the sample ($n = 10$, 10.4%). It is apparent that the significant relationship between internalized stigma and type of discloser in the path analysis was driven, in large part, by the difference between relative non-disclosers and selective disclosers. A greater number of full disclosers (and likely a larger sample) are necessary to fully understand the characteristics of full disclosers on the study variables (for greater discussion on this limitation, please see “Limitations” section).

In line with the research hypothesis, results revealed participants’ first disclosure experiences scores were negatively correlated with internalized stigma scores. This finding suggests that participants with higher levels of internalized stigma had less positive first disclosure experiences or those with more positive first disclosure experiences reported lower levels of internalized stigma. This finding is not surprising in light of previous research that showed that higher levels of internalized stigma were associated with depression and low self-esteem (Lee & Boyd, 2010) and lower self-esteem has been associated with poorer (less positive) disclosure experiences (Chaudoir & Quinn, 2010). In other words the negative correlation between internalized stigma and first disclosure experience could be explained by higher internalized stigma leading to a more negative first disclosure experience mediated by self-esteem. In other words, people with higher internalized stigma have lower self-esteem and the low self-esteem of the discloser makes a less positive disclosure experience more likely. However, it is equally likely (because the relationship is correlational) that a negative first disclosure experience, where a trusted discloser confidant reacts negatively, leads to a greater internalization of stigma.

Unexpectedly, first disclosure experience was not related to type of discloser as hypothesized. Previous literature indicated that more positive first disclosure experiences were associated with less fear about disclosure and subsequently a greater number of future disclosures (Chaudoir & Fisher, 2010; Chaudoir & Quinn, 2010). Contrary to previous literature, the analyses revealed that first disclosure experience was negatively (rather than positively) related to the type of discloser one becomes, however this relationship was not significant.

One possible explanation for this finding is that selective disclosers were found to value authenticity significantly more than relative non-disclosers. The importance of being authentic with close others (family and friends) may supersede fears or negative emotions about disclosure. Inauthenticity itself is uncomfortable; research on the negative psychological, social, and physical repercussions of inauthenticity or personal inconsistency is abundant (e.g., Donahue, Robbins, Roberts & John, 1993; Sheldon, Ryan, Rawsthorne, & Illardi, 1997). In other words, one would rather risk a negative disclosure experience than experience the discomfort associated with inauthenticity.

Additionally, authenticity is important to attachments in relationships. Recent research has shown that those who are more authentic (or value authenticity) score low on the both dimensions of state attachment insecurity, anxiety and avoidance (Gillath, Sesko, Shaver & Chun, 2010). It is possible, perhaps probable, that insecurely attached people are more likely to be relative non-disclosers than securely attached individuals. Individuals who are insecurely attached are more likely to be fearful of disclosing their status than those who are securely attached.

An alternative explanation might be that people who have the most positive disclosure experiences are more adept at selecting disclosure partners who will react favorably (e.g., be supportive, kind and helpful) than those who had more negative first disclosure experiences. Relative non-disclosers may be able to obtain the social support they need from fewer disclosures because they can more readily identify people in their lives they will have positive disclosure experiences with. Selective disclosers may need to disclose to more people in order to get the support they need. However, data from this study would not support this particular explanation as disclosure groups did not differ significantly on general disclosure experiences. If the “adeptness explanation” were valid one should see that relative non-disclosers have more favorable general (or subsequent) disclosure experiences, but this is not the case. Also, one would expect the relative non-disclosers and selective disclosers to have comparable levels of social support. However, the analyses reveal that social support is positively (significantly) related to disclosure, meaning the more one discloses the more social support they have. This finding aligned with the research hypothesis and with prior research (for a review see Smith, Rossetto, & Peterson, 2008). Like Stutterheim et al. (2011), findings of the current study reveal there is no difference between selective disclosers and full disclosers. Unlike Stutterheim et al., the current study did have a relative non-discloser group and selective disclosers had a significantly higher social support scores than relative disclosers while full disclosers did not differ from either group (they were nested in the middle). Again this finding may be attributed to the low number of full disclosers thus making it difficult to draw any meaningful conclusions from the data about this group.

Surprisingly, social support was negatively related to CD4 count; greater social support was related to lower CD4 counts. This finding is the opposite of the original hypothesis stating social support would be associated with *higher* CD4 counts (better health outcomes). Social support was found to fully mediate the relationship between type of discloser and CD4 count, but not in the way it was predicted. This finding is surprising because literature documenting the positive effects of social support on various health-related outcomes is plentiful. Social support has been associated with higher self-esteem (Stutterheim et al., 2011), lower levels of depression (Mellins, Kang, Leu, Havens, & Chesney, 2003; Stutterheim et al., 2011), and better adherence to HAART, medication necessary suppressing HIV, and boosting CD4 count (Stirratt, Remien, Smith, Copeland, Dolezal, & Krieger, 2006; Wadell & Messeri, 2006). A literature review by Uchino, Cacioppo, Kiecolt-Glaser (1996) assessing the impact of social support on health outcomes found “relatively strong evidence” (p.521) linking social support to improved aspects of cardiovascular, endocrine, and immune systems.

The social support assessment, SSL12-I, itself may have contributed to the results. The SSL12-I is a social support measure that focuses on the presence or absence of *positive* aspects of social support. As Uchino, Cacioppo, and Kiecolt-Glaser (1996) point out in their review of literature on social support and health outcomes, measurement (or assessment choice) of social support is a persistent issue in the social support literature due to varying psychometric properties of social support measures. For example, items on the SSL12-I asks people to report how often other people engage with the participant in various supportive exchanges or activities (e.g., compliment them, or come over for a nice visit). The aspects of social support measured on this inventory could vary over time

(e.g., six months ago a lot of people were coming to visit, but now I feel isolated) and CD4 levels likely do not respond to very recent shifts in social support. It is highly doubtful the results of the analysis can be attributed a recent mass change in social support, but the measure may not have been the best choice to for this research due to the aforementioned limitations.

In a similar vein, negative aspects of social relationships have been shown to have a deleterious effect on psychological (Pagel, Erdly & Becker, 1987; Rook & Pietromonaco, 1987) and immunological (Herbert & Cohen, 1993) functioning. Research has shown that positive aspects of social support are independent of negative aspects of social relationships (Ruehlman & Karoly, 1991 as reported in Uchino, Cacioppo, Kiecolt-Glaser 1996). Measurements that ignore negative aspects and focus on the frequency of positive interactions are missing a vital component of social support. Measurements that capture the “dual” nature of social support are viewed more favorably because they capture the full spectrum of social relationships (Cacioppo & Bernston, 1994; Watson, Clark, & Tellegen, 1988). The SSL12-I used to measure social support in the study focused only on positive interactions; thus it is possible that some unmeasured negative interpersonal relations are dragging down CD4 levels independent of the interactions measured.

While measurement (instrument) reliability is important to consider it seems unlikely that some unmeasured negative aspect(s) of social relationships have impacted participants at a level that produces the pattern of results found in the sample. Similarly, it is unlikely that a recent mass shift in social support is responsible for the results. The most likely explanation for the results can be attributed to the survey methodology

employed. In particular, social support and CD4 count were reported in the same sitting. Measuring these variables at the same time allows for the possibility that people presently eliciting more social support are doing so because they are currently in poorer health (have lower CD4 counts) and/or close others are providing more social support to their HIV+ loved-one because that person is sick (or in poorer health). In other words, controlling for all other variables, sick people generally need, ask, and obtain more help from close others (and social support) than do healthy people.

Differences in Discloser Type Composition

It is important to note that major differences in discloser type distribution between Stutterheim et al. (2011) and the current study despite the fact disclosure groups were classified in the same broad ways, full disclosers disclose to the majority of the people in both private and public situations and selective disclosers disclose in private situation, but not in public situations. The Stutterheim et al. (2011) study also examined a third group; those who had a visible indicator of HIV infection and they did not have enough non-disclosers (people who did not disclose to anyone) to include them in analyses. The full disclosers made up the majority of the entire sample, followed by selective disclosers, and the visibly stigmatized, respectively.

By contrast the majority of the current study sample was relative non-disclosers followed by selective-disclosers and full disclosers, respectively (fifteen participants indicated they had visible indicator of HIV infection, but were not analyzed as a separate category because they did not differ from those who did not have a vestige of HIV infection on any research or auxiliary variable). The differences in composition of discloser type can likely be attributed to the way in which disclosure was measured in

each study. Stutterheim et al. (2011) likely used a Likert type scale to assess the amount of people a participant discloses to in each category (family, friends, acquaintances and coworkers). They classified a full discloser who disclosed to “most” of the people in each category. The present study asked participants to estimate the percentage of people they told in each of the aforementioned categories. When participants reported disclosing to $\geq 50\%$ of the people in a given relationship category (e.g., family), they were categorized as disclosing to *most* of the people in that category. The different scales likely lead participants to think of the question in different ways. The scale in Stutterheim et al. (2011) likely brought to mind people in that particular group who they are close to (or more important to them) rather than asking them to think about the groups as a whole. Whereas the current study encouraged them to think of the group as a whole, not just members of that group to whom they are particularly close. If this assertion is true, it is easy to see why the discloser distribution of Stutterheim et al. (2011) study and the current study differed so markedly. It could be reasonably argued that the measurement scale used in the present study yielded a more conservative estimate of total disclosure than did Stutterheim et al. (2011). Evidence for this assertion is that far fewer people were classified as full disclosers and a category of disclosure that did not exist in the Stutterheim et al. (2011), the relative non-discloser, not only emerged but was the disclosure category with the greatest number of participants.

For the aforementioned reasons, it is not probable that participants in the Stutterheim study differed significantly (in actuality) from the participants in the current study on total amounts of disclosure. However, it is impossible to know for sure if differences in disclosure do exist from sample to sample unless researchers agree upon a

common way operationalizing and measuring type of discloser. Ultimately nearly every person with HIV is a *selective discloser* in that very few people disclose to everyone in their lives or conceal their serostatus from everyone they know. In other words, almost everyone *selects* to tell some people in their lives and *selects* not to tell others.

Limitations and Future Directions

One notable limitation of the study was the small number of full disclosers (as suggested in previous sections). The small amount of full disclosers made it difficult to confidently draw conclusions about them (full disclosers) based on the data. Additionally, the small number of full disclosers made it difficult to understand the relationships between the variables for each discloser type and detect differences between types of disclosers. The present study had a relatively small sample size and consequently produced a very small number of full disclosers. Full disclosers, as defined by this study, are likely to be the smallest group (in terms of people who fit into this group) of the three types of disclosers. A larger sample size would likely yield a greater number of full disclosers. For example, if full disclosers make up 10% of the HIV+ population then a sample size of 300 should consist of about 30 full disclosers and those 30 would provide a more accurate estimate of relationship between full disclosers and the variables of interest.

While small in number, full disclosers are important to study and vital to understanding the relationships between the research variables (i.e., first disclosure experience, internalized stigma, social support and CD4 count) and the type of discloser. For instance, a larger number of full disclosers would help to discern whether social support does increase with a greater number of disclosure experiences *or* if increases in

social support level off after a certain amount of disclosures. In other words, (1) Does a person benefit (garner more social support) from full disclosure (i.e., telling most coworkers and acquaintances in addition to family and friends) than if they had disclosed to their families and friends? *or* (2) Does one receive the maximum benefit of social support from disclosing to family and friends and public disclosure has no additional benefit (or possibly be detrimental)?

As mentioned in the previous section, instruments used to measure the variables crucial to the study may have been problematic. First, SSL12-I might not have been the best choice for measuring social support and testing whether social support mediates the relationship between the type discloser and CD4 count. Social support would have been better measured by a more global measure of social support, one that measures both the positive aspects of social relationships (social support) as well as negative aspects of social relationships. This would allow researchers to take the complexities of human interaction(s) into account when investigating the relationship between social support and CD4 count.

The first disclosure experience measure received a fair amount of negative feedback from Internet participants who complained it was too simplistic to measure, what they described as, a very complex and nuanced experience. The measure did boast acceptable internal reliability ($\alpha = .86$), but focused primarily on the reactions of the first disclosure partner and ignored other aspects of the first disclosure experience that contribute to the overall evaluation of the experience. As one participant said, “My first disclosure experience was a horrible, it was a horrible time, but my partner’s reaction was supportive.”

Focusing primarily on disclosure partners' reactions was intentional in planning this study. Previous research has emphasized the importance of the disclosure partner's response on the discloser's evaluation of the disclosure experience and on the amount of subsequent disclosures (see Chaudoir & Quinn, 2010). In retrospect, the measure for first disclosure experience may have been short-sighted and the criticisms valid. A multidimensional instrument (measuring both the first discloser's feelings and the disclosure partner's reactions) for measuring first disclosure experience may have been a better choice and may help to explain the negative relationship between first disclosure experience and discloser type. For example, it might be that negative emotions (e.g., anxiety, guilt, shame etc.) and/or the stress associated with disclosure contribute more (or equally) to the discloser's assessment of the disclosure experience (positive or negative). Future research should examine both dimensions (discloser's feelings and the response of their disclosure partner) of first disclosure experience on the type of discloser one becomes.

The possibility of two heterogeneous subsamples within the total sample could be a rather serious limitation of the study. It is a limitation *if* the results from total sample analyses are nothing more than a consequence of an amalgam of data from heterogeneous subsamples and subsequently do not accurately reflect the relationships of the variables of interest in the HIV+ community. It is unknown whether the differences in the subsample exploratory analyses are *real* differences or the figment of small sample-sizes. In statistics size does matter and the results of the subsample analyses should be viewed and interpreted with caution. Replicating this study using a larger sample size (more

participants from each subsample) would help to determine whether the subsamples do differ.

The differences found between the two subgroups could be an important avenue for future research. *If* the groups are different future research could focus on identifying the characteristics (or mechanisms) that cause the relation between the study variables to be expressed differently between the groups. One possible explanation for the differences may be disparities in connectedness to the HIV community. Data gleaned from the subsample comparisons suggest that the Internet group had many advantages over the ASO group, they were less likely to be in poverty and attained a higher level of education on average. Additionally, the Internet participants were mostly homosexual and Caucasian compared to mostly heterosexual and African-American in the ASO group. Race and sexual orientation do matter, research has shown homosexuals and Caucasian communities are less prejudiced than heterosexual and African-American communities (*see* Overstreet et al., 2012; Pryor & Reeder, 1993).

Given all the previously mentioned disadvantages, one would expect the ASO group to have higher internalized stigma, less social support, and be in worse health. You would also expect the ASO group to have a less optimistic outlook on life than those in the Internet group. However, the results revealed the ASO group had significantly lower internalized stigma and significantly higher social support than their Internet counterparts. ASO participants tended to have a better general outlook on life as well. The explanation for these seemingly counterintuitive findings may be attributed to the fact that the vast majority of the ASO group was living with a community of other HIV+ people. Recent research has shown that strong connectedness to the HIV+ community

ameliorates the negative effects of living with a visible vestige of HIV (Brener, Callander, Slavin & de Wit, 2013).

Disparities in connectedness to the HIV community combined with access to resources may provide an explanation for the differences between subsamples on the relationship between social support and CD4 count. Specifically social support and support from the ASO was likely necessary to gain access to the health care and medication to properly manage HIV infection. The participants in the ASO group need others to obtain resources and, as a result, are connected with people who also have HIV. By contrast, participants in the Internet group are more likely to secure health care and medication *without* the assistance of community (due to more education, higher income) and do not necessarily need other people to properly manage their health (or at least their CD4 count). People who can afford private healthcare are not connected with other HIV+ people out of necessity, and must actively seek out other HIV+ people (e.g., support groups) to become connected to the community. Examining the relationship between access to healthcare and connectedness to the HIV community would be an interesting and worthwhile for future research to pursue.

Conclusions

The decision to disclose one's HIV status is a difficult and complex given that HIV infection remains a highly stigmatized condition. Identifying and understanding the factors that affect and are affected by disclosure is important because it is the first of many steps toward ending HIV-related stigma.

This study examined the impact of first disclosure experience and internalized stigma on the type of discloser a person becomes. Results revealed internalized stigma

leads to fewer disclosures while more positive first disclosures are related to fewer disclosures. While those who disclose more often tend to have more social support, higher levels of social support were associated with lower CD4 counts.

Results of the study suggest that factors related to disclosure may impact different groups of people in different ways. The current study consisted of what appeared to be two different sub-populations differing not only demographically, but the results of preliminary analyses suggest these groups may differ in the way the research variables impact them and their decisions to disclose. While the results of the subsample analyses were only exploratory in nature, they do alert researchers to potential critical differences within the HIV+ population and expose many research questions worthy of further investigation.

APPENDIX A:
SURVEY MATERIALS

Disclosure Survey

First Disclosure Experience

Please answer the following questions about your ***FIRST*** disclosure experience to a non-medical or testing professional. Please circle your answer.

1. Who was the first person (non-medical) you disclosed your HIV status to?
 - a. Primary Romantic Partner
 - b. Friend
 - c. Acquaintance
 - d. Family member (see below)
 - e. Other (see below)
 - f. N/A: I have not disclosed (*please skip to page 4*)

If you selected *family member* please specify which family member(s) you told first _____

If you selected *other* please specify who you first disclosed to _____

2. What was your primary reason for disclosure?
 - a. To obtain moral or social support
 - b. Out of moral obligation
 - c. Someone found out/asked if you were HIV+
 - d. Other

If you selected *other* please specify _____

Please answer the following questions about your ***FIRST*** disclosure experiences on the scales provided below. Please note there are different labels for some of the questions.

	Awful	Bad	Good	Very Good
3. How would you rate your first disclosure experience?	1	2	3	4
	Very Negative			Very Positive
4. How would you rate your first disclosure partner's overall reaction?	1	2	3	4

5. Please rate your **FIRST** disclosure partner on the following dimensions. Please use the following scale: 1 = *Not at all*; 2 = *A little*; 3 = *Moderately*; 4 = *A great deal*.

	Not at all	A little	Moderately	A great deal
Supportive	1	2	3	4
Sad	1	2	3	4
Angry	1	2	3	4
Judgmental/Blaming	1	2	3	4
Scared	1	2	3	4
Hurt	1	2	3	4
Understanding	1	2	3	4
Rejecting	1	2	3	4
Hopeful	1	2	3	4
Caring	1	2	3	4

General Disclosure Experiences

Please answer the following questions about your disclosure experiences in **GENERAL**

	Awful	Bad	Good	Very Good
1. How would you rate your disclosure experiences in general?	1	2	3	4
	Very Negative			Very Positive
2. How would you rate your disclosure partners' reactions in general?	1	2	3	4

Total Disclosures

The following questions address who (the groups of people) you have disclosed your status to.

1. Have you disclosed your status to your primary romantic partner?
 - a. No
 - b. Yes
 - c. N/A
2. Did you disclosure your status to your ex primary romantic partner?
 - a. No
 - b. Yes
 - c. N/A

For the following 5 groups of people please circle the percentage (%) that best describes/ estimates the number of people in the group listed above you have disclosed your status to. This is only an estimate. You do not need to perform any calculations. If a particular group does not apply to you (e.g., you do not have job or are self-employed) leave the boxes BLANK, do NOT select "0".

Example: If I think I've told about half (50%) of my acquaintances then I would circle 50 under Acquaintances. If I think I've only told only 1 of 10 (10%) co-workers I would circle 10. We are looking for an estimate. You do not need to calculate the number exactly.

1. Immediate and Extended Family

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

2. Friends

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

3. Acquaintances

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

4. Coworkers

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

5. Strangers

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Life and Personal Assessments

Please rate how well each statement describes you on the scale listed below. Please circle your answer choice.

	Does not describe me at all			Neutral			Describes me very well
1. I am satisfied with my life.	1	2	3	4	5	6	7
2. I am often the	1	2	3	4	5	6	7

target of
discrimination.

3. I am confident I can have the career I want.	1	2	3	4	5	6	7
4. I always stay by what I believe in.	1	2	3	4	5	6	7
5. I am true to myself in most situations.	1	2	3	4	5	6	7
6. I think it is better to be yourself than to be popular.	1	2	3	4	5	6	7

Social Support

This is a questionnaire in which the term "people" is used frequently. By "people" is meant all the people you associate with, such as, your relatives, your friends, acquaintances, colleagues etc. You can choose between one of the following answers. (1) Seldom or never; (2) Now and then; (3) Regularly; (4) Very often. Please circle the answer that best describes your experiences. Does it ever happen to you that...

	Seldom or Never	Now and Then	Regularly	Very Often
that people invite you to a party or dinner?	1	2	3	4
drop in for a (pleasant) visit?	1	2	3	4
show you that they are fond of you?	1	2	3	4
comfort you?	1	2	3	4
pay you a compliment?	1	2	3	4
are interested in you?	1	2	3	4
provide you with help in certain circumstances, such as: illnesses or moving home?	1	2	3	4
	1	2	3	4

reassure you?				
give you good advice?	1	2	3	4
confide in you?	1	2	3	4
ask you for help or advice?	1	2	3	4
emphasize your strong points?	1	2	3	4

Feelings about HIV Status

Please read the following statements and think about how true each of the items are. Some items ask how you think society views people with HIV in general, other questions pertain to your personal feelings about being HIV+. The items are rated on the scale below, 1= none of the time, 2= some of the time, 3= Most of the time, 4= all of the time.

	None of the time	Some of the time	Most of the time	All of the time
1. HIV is different than other diseases like cancer because people with HIV are judged	1	2	3	4
2. People assume I have done something bad to get HIV	1	2	3	4
3. Society looks down on people who have HIV	1	2	3	4
4. People think that if you have HIV then you got what you deserve	1	2	3	4
5. People blame me for having HIV	1	2	3	4
6. People assume I slept around because I have HIV	1	2	3	4
7. People think that if you have HIV you do not deserve to have children	1	2	3	4
8. People are afraid to let someone with HIV adopt a child	1	2	3	4
9. People think I am a bad person because I have HIV	1	2	3	4

10. Medical providers assume people with HIV sleep around	1	2	3	4
11. People lose their jobs because they have HIV	1	2	3	4
12. People think you can't be a good parent if you have HIV	1	2	3	4
13. I am concerned if I go to the HIV clinic someone I know might see me	1	2	3	4
14. I am concerned if I have physical changes from the HIV medicines people will know I have HIV	1	2	3	4
15. I am concerned if I go to an AIDS organization someone I know might see me	1	2	3	4
16. I am concerned people will find out I have HIV by looking at my medical paperwork	1	2	3	4
17. I am concerned that if I am sick people I know will find out about my HIV	1	2	3	4
18. Nurses and doctors treat people who have HIV as if they are contagious	1	2	3	4
19. Nurses and doctors dislike caring for patients with HIV	1	2	3	4
20. I feel abandoned by family members because I have HIV	1	2	3	4
21. People treat me as less than human now that I have HIV	1	2	3	4
22. People avoid me because I have HIV	1	2	3	4
23. People I am close to are afraid they will catch HIV from me	1	2	3	4
24. I feel like I am an outsider because I have HIV	1	2	3	4
25. I feel ashamed to tell other people that I have HIV	1	2	3	4
26. I am comfortable telling everyone I know that I have HIV	1	2	3	4

27. My family is comfortable talking about my HIV 1 2 3 4

28. It is important for a person to keep HIV a secret from co-workers 1 2 3 4

HIV-Related Medical Information

Please answer the following questions about your HIV-related medical history. Please leave any question you do not know or cannot remember blank.

1. How long have you known you are HIV+? (If greater than 1 year please fill out the “years” blank. If less than 1 year please fill out the “months” blank.)

_____ years or _____ months

2. How old were you when you were first diagnosed with HIV? _____

3. What was your *viral load* when you first tested positive? (If VL testing was not available when you tested positive please circle “N/A”). _____ or N/A

4. What was your CD4 count when you first tested positive? _____

5. Are you on a HAART/ART regimen? (If “no” please skip to question 6)

No Yes

If yes,

a. How long have you been on HAART (in years or months)?

_____ years/_____ months

b. How adherent are you to your HAART (ART) medication? Please circle the answer the best describes you.

1. I frequently miss/forget to take medication
2. I take it most of the time, miss dose now and then
3. I always take my medication

6. What was your viral load at your most recent doctor visit? _____

7. What was your CD4 count at your most recent doctor visit? _____

8. What range best describes your CD4 trend? If your range occupies two categories choose the higher category. Select N/A if your diagnosis is relatively new.

0-200 201-300 301-400 401-500 501-600 601-700 701-800 800+ N/A

9. Have you ever been diagnosed with AIDS (CD4 < 200)?

No Yes

10. Do you have an (obvious) visible indicator of HIV infection? (e.g., severe lipodystrophy, AIDS-related wasting, AIDS-related dementia etc.)

No Yes Don't know/Not sure

11. In the past year (12 months) have you been diagnosed with any of the following opportunistic infections? Please circle all that apply.

Candidiasis (thrush) Yes No

CMV (cytomegalovirus) Yes No

Cryptococcal meningitis Yes No

Cryptosporidiosis Yes No

HIV encephalopathy (dementia)	Yes	No
Kaposi's sarcoma (KS)	Yes	No
Lymphoma		
MAI	Yes	No
PCP (pneumocystis pneumonia)	Yes	No
Thrombocytopenia	Yes	No
Toxoplasmosis	Yes	No
Tuberculosis (TB)	Yes	No
Other	Yes	No
If other please specify_____		

Demographics

Please provide some general information about yourself. We will not be asking you to provide any identifying information and you may skip any question you do not feel comfortable answering.

1. What is your age (in years)? _____
2. How do you believe you contracted HIV?
 - a. Sexual contact with a male
 - b. Sexual contact with a female
 - c. IV drug use
 - d. Don't know/Not sure
 - e. Other, please specify _____
3. Are you currently, or have you ever been an IV drug user? No Yes
4. What is your gender?
 - a. Male
 - b. Female
 - c. Transgendered M to F
 - d. Transgendered F to M
5. How would you best describe your sexual orientation?

- a. Exclusively heterosexual with no homosexual
- b. Predominantly heterosexual, only incidental homosexual
- c. Predominantly heterosexual, but more than incidental homosexual
- d. Equally heterosexual and homosexual
- e. Predominantly homosexual, but more than incidental heterosexual
- f. Predominantly homosexual, only incidental heterosexual
- g. Exclusively homosexual with no heterosexual

6. Which broad category best describes your income level? Below poverty level Above poverty level

7. Which best describes your level of education?

- a. Less than a HS diploma or GED
- b. High school diploma or GED
- c. Associates degree or trade school
- d. College graduate (BA, BS)
- e. Masters Degree (MA, MS, MBA)
- f. Law school graduate (JD)
- g. PhD or MD

8. What is your race/ethnicity?

- a. African-American/Black/African Decent
- b. Asian or Pacific Islander
- c. Caucasian/White
- d. Latino/Hispanic
- e. Other, please specify _____

9. What is your relationship status?

- a. Single/Never married or never in a domestic partnership
- b. Married or Domestic Partnership
- c. Divorced
- d. Separated
- e. Widow/Widower

APPENDIX B:
ADDITIONAL PARTICIPANT ANALYSES

Internet Group Breakdown

Table 18 shows the breakdown of participants (included in the analyses) by website where they were recruited. It should be noted that two Internet sites who allowed me to solicit participants did not yield any participant data (i.e., no one took the survey).

Table 18. Number of Participants and Additional Demographic Data by Website

Website	Number of Participants ¹	% of Internet Sample	% of Total Sample	% from United States	# of States Represented ²	# of non-US Countries Represented ³
The Poz	38	57.58	39.58	73.3	22	7
Reddit	22	33.33	23.92	66.7	10	5
AIDSTribe	2	3	2.1	50	1	1
Nebraska Source	2	3	2.1	100	1	--
Social Psychology Network	2	3	2.1	50	1	1

¹ Participants included in the total sample of 96

² Based on participants who provided state data

³ Based on participants who provided country data

There were at least 26 U.S. States and 11 non-U.S. countries represented in the sample. Table 19 provides the state and country breakdown of the sample.

Table 19. States and Countries Represented in the Total Sample

States Represented	Countries Represented
Alabama	Australia
California	Belgium
Connecticut	Brazil
Florida	Canada
Georgia	France
Illinois	Ireland
Kansas	Jamaica
Louisiana	Netherlands
Massachusetts	Switzerland
Michigan	Thailand
Missouri	United Kingdom
Montana	
Nebraska	
New Hampshire	

Table 19 continued

States Represented	Countries Represented
New Mexico	
New York	
North Carolina	
Ohio	
Oklahoma	
Pennsylvania	
South Carolina	
Tennessee	
Texas	
Virginia	
Washington	
Wisconsin	

APPENDIX C:
ALTERNATIVE PATH ANALYSIS

Alternative Path Analysis

Since Lisrel 8 treats discloser type as a continuous rather than an ordinal variable, an alternative piecemeal analysis was performed where, at least in Step 1, discloser type is treated as an ordinal variable. Ordinal regression was used to examine the relationship between first disclosure experience, internalized stigma and disclosure type. *Indirect* macros (Preacher & Hayes, 2008) was employed to test whether social support mediates the relationship between disclosure type and CD4 count. It should be noted that *Indirect* mediational analysis treats discloser type as a continuous variable. To my knowledge there is not a good way to examine indirect effects with an ordinal predictor variable.¹³ Figure 6 shows the first step of the piecemeal analysis with the unstandardized coefficients.

Step 1

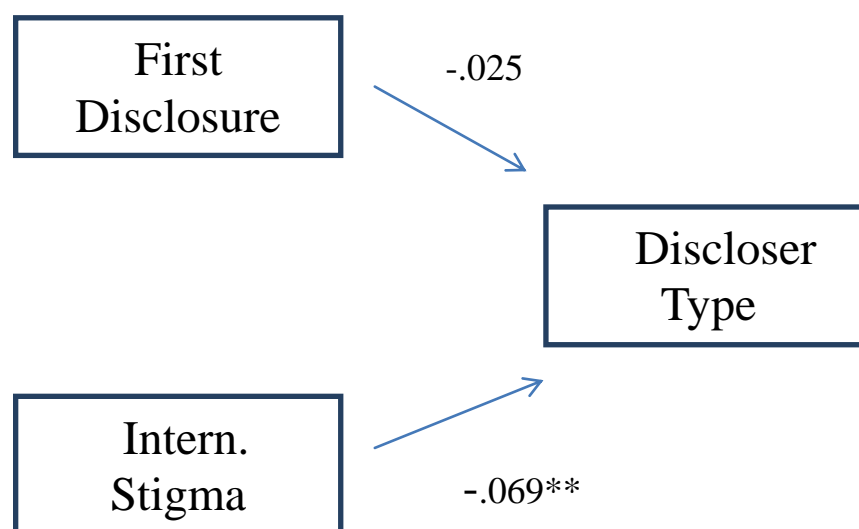


Figure 6. Step one of piecemeal path analysis: Alternative analysis.

¹³ Preacher and Hayes have a macros for a nominal (but not ordinal) variable called *Mediate*

The results of step one reveal that, like the original analysis performed using Lisrel 8, internalized stigma significantly predicts the type of discloser one becomes. The ordered log odds estimate indicates that for every one point increase in internalized stigma a participant's log odds of being in a higher disclosure group would decrease by .069 while the other variables in the model (i.e., first disclosure experience) are held constant. The relation between disclosure experience and type of discloser was not significant. The sign of the coefficient points to a negative relation between first disclosure experience and discloser type, the same relation found in the original analysis. A separate correlation analysis revealed that first disclosure experience and internalized stigma were significantly correlated, as originally hypothesized, $r(96) = -.183, p = .03$.

Table 20 provides the parameter estimates, odds ratio and fit statistics for the first step of the model.

Table 20. Unstandardized Coefficients, Odds Ratios, and Fit Indices for Alternative Path Analysis

Independent Variables	Coefficient	Odds Ratio
First Disclosure Experience	-.025	.98
Intern. Stigma	-.069**	.93
Model Fit	Test Value (<i>df</i>)	<i>p</i> -value
-2 log likelihood X^2	15.14(2)	.001
Pseudo R^2	Value	
Cox and Snell	.15	
Nagelkerke	.18	

** $p < .01$

The likelihood ratio chi-square compares the present model with the null model (a model where none of the predictors is significant = 0). The significance value is the probability of obtaining a chi-square value (in this case 15.14) with a model where none of the

predictors differed from zero. The model fit fits well by this fit standard as there only a .1% chance that neither of the predictors differed from zero. In other words, there is a 99.9% chance that at least one of the predictors differs from zero.

The pseudo R^2 values are an approximation for the amount of variances that is explained by the model. Values range from 0 to 1 with higher values indicating a better fit. The tests listed in Table 14 show that model explains .15 and .18 of the variance on the Cox and Snell and Nagelkerke, respectively.

Step two of the piecemeal analysis tests the hypothesis that social support fully mediates the relation between type of discloser and CD4 count in the total sample. The *Indirect* macro developed by Preacher and Hayes (2008) was conducted to test this hypothesis. Figure 7 provides the path coefficients for the total sample.

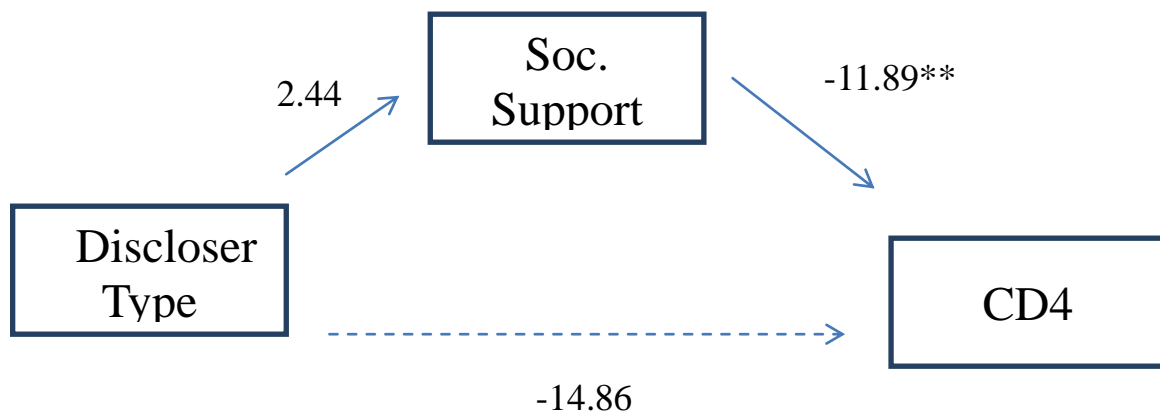


Figure 7. Step two of piecemeal path analysis: Alternative analysis.

The results of the *Indirect* macro analysis reveal the same results as the original Lisrel 8 path analysis. Discloser type is a significant predictor of social support, specifically more disclosure is related to more social support. Social support is significantly predicts CD4 count in the opposite direction of the hypothesis. In other

words, higher levels of social support were related to lower CD4 count; those in worse health had reported more support than those in better health. Table 21 provides the path coefficients and values.

Table 21. Path Coefficients for Alternative Mediation Analysis

Path	Coefficient	se	<i>t</i>	<i>p</i>
Discloser Type → Social Support (a)	2.44	1.23	1.98	.05
Social Support → CD4 Count (b)	-11.89	4.39	-2.70	.008
Discloser Type → CD4 Count (c)	-43.89	54.36	-.81	.42
Discloser Type → CD4 Count (c')	-14.86	53.70	-.28	.78
	R^2	Adj. R^2	$F(2,93)$	<i>p</i>
Model Summary	.08	.059	4.00	.02

APPENDIX D:
SUPPLEMENTARY ANALYSES

Comparisons of AIDS Visible and AIDS Not Visible Groups

Unlike previous studies no differences were found between participants who indicated they had a visible indication of HIV and those who reported they did not have any outward vestiges of HIV. Table 22 below provides the comparisons between the AIDS Visible group (n =15) and the AIDS Not Visible group (n=80) on key study variables as well as auxiliary variables. Since these groups did not differ significantly participants who had physical vestiges of the HIV were “rolled” into the three disclosure groups instead of a separate group.

Table 22. Comparison of AIDS Visible and AIDS Not Visible Participants on Key and Auxiliary Variables

	AIDS Visible	AIDS Not Visible		
	<i>M(SD)</i>	<i>M(SD)</i>	<i>Df</i>	<i>t-test</i>
Key Study Variables				
First Disclosure Exp.	34.33(7.93)	37.00(7.72)	93	ns
Internalized Stigma	29.89(13.58)	33.97(14.87)	93	ns
Social Support	35.07(8.53)	32.64(8.24)	93	ns
CD4 Count	595.13(289.58)	606.95(368.73)	93	ns
Auxiliary Variables				
Life Satisfaction	5.60(1.84)	4.94(1.78)	93	ns
Target of Discrimination	2.86(1.96)	2.31(1.55)	92	ns
Career Outlook	4.60(2.44)	4.90(2.01)	93	ns
Authenticity Avg.	5.85(1.19)	5.89(1.07)	93	ns
General Disclosure Avg.	2.93(.92)	3.02(.71)	90	ns

Internalized Stigma Subscale Predictive Analysis

Linear and ordinal regression analyses show the impact of the internalized stigma scale and the Internalized Stigma subscales (Stereotypes about HIV, Disclosure Concerns, Social Relationships, and Self-Acceptance) on the type of discloser one becomes. Table 23 (below) displays the results of the ordinal regression analysis where disclosure category is treated as an ordinal variable. The results of both analyses reveal that the Internalized Stigma Scale and the Stereotypes, Disclosure Concerns, and Self-Acceptance are significant predictors of disclosure category only the Social Relationship subscale is not significant in both analyses. The results of the analyses also suggest that Disclosure Concerns and Self-Acceptance are the strongest predictors of the type of discloser a person becomes.

Table 23. Linear Regression of Internalized Stigma Scale and Subscales on Disclosure Category

	R	R ²	Adj. R ²	F(1,95)
Internalized Stigma Full Scale	.35	.12	.115	13.29***
Subscales				
Stereotypes	.22	.05	.036	4.55*
Disclosure Concerns	.43	.18	.172	20.70***
Social Relationships	.08	.01	-.004	ns
Self-Acceptance	.42	.18	.167	20.04***

* $<.05$, ** $<.01$, *** $<.001$

Table 24. Ordinal Regression of Internalized Stigma Scale and Subscales on Disclosure Category

	Coefficient	Odds Ratio	Wald(1)	Cox and Snell	Nagelkerke
Internalized Stigma Full Scale	-.065	.94	11.24***	.14	.17
Subscales					
Stereotypes	-.069	.93	4.26*	.05	.06
Disclosure Concerns	-.37	.69	13.08***	.24	.29
Social Relationships	-.062	.94	ns	.01	.01
Self-Acceptance	-.39	.68	17.22***	.21	.25

* $<.05$, ** $<.01$, *** $<.001$

Source by Disclosure Category Analyses

The following are interaction analyses between the type of source (Internet vs. paper) and disclosure category. Univariate Analysis of Variance (ANOVA) was conducted to examine the possible interaction of source and disclosure category on the key study variables.

Table 25. Source by Disclosure Category Interaction Results for Key Study Variables

Source*Disclosure Category on...	<i>F</i> (2,96)
First Disclosure Experience	2.42†
Internalized Stigma	ns
Social Support	ns
CD4 Count	ns

† $p = .095$

As Table 25 shows there were not any significant source by disclosure category interactions at .05 alpha level. However, there was a marginally significant interaction of source by disclosure category on first disclosure experience, $F(2,96) = 2.42, p = .095$. Follow-up results show differences between Internet and ASO subsamples for relative non-disclosers and selective disclosers. No significant ($p < .05$) differences were found in first disclosure experience for any of the disclosure groups. However, a marginally significant difference on first disclosure experience between the sub samples was found for relative non-disclosers, $t(64) = -1.71, p = .09$. Internet participants categorized as relative non-disclosers reported a more positive first disclosure experience ($M = 37.5$) than relative non-disclosers in the ASO subsample ($M = 33.9$). Figure 8 shows the pattern of results.

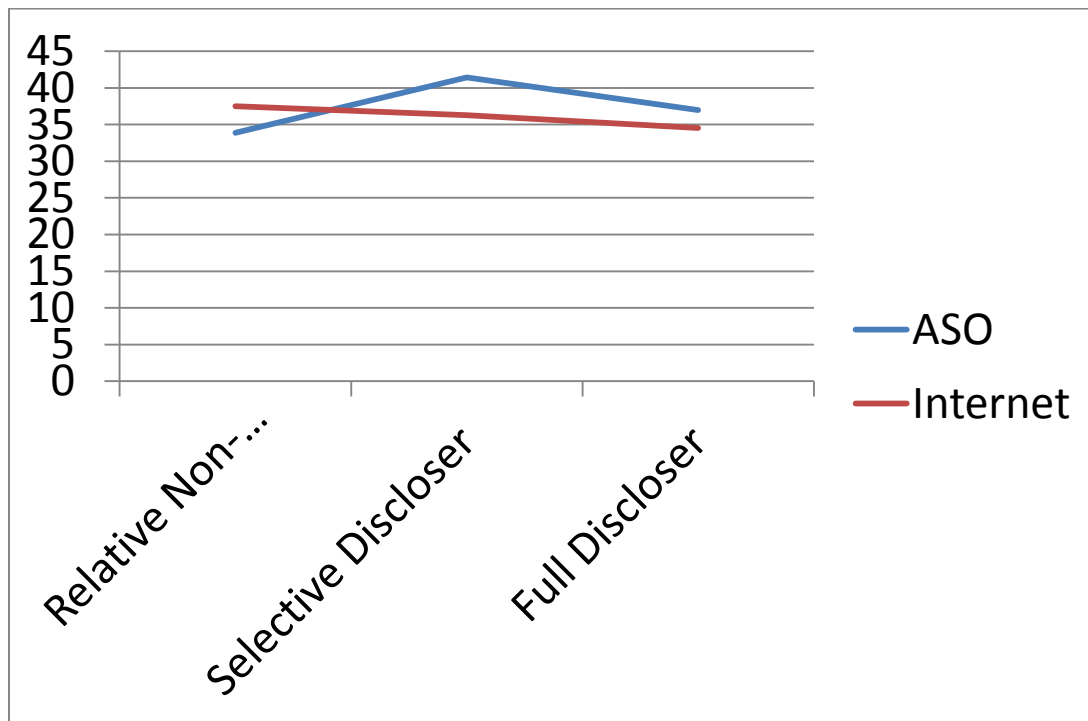


Figure 8. Pattern of first disclosure experience: Subsamples by disclosure category.

The following are interaction analyses between the type of source (Internet vs. paper) and disclosure category. Univariate Analysis of Variance (ANOVA) was conducted to examine the possible interaction of source and disclosure category on the auxiliary study variables. As Table 26 shows there were no significant interactions between subsample and disclosure category on the auxiliary variables at the .05 level. However, there was a marginally significant interaction of source by disclosure category on authenticity, $F(2,96) = 2.66, p = .08$. Once again, differences between the ASO and Internet subsamples on social support for selective disclosers and full disclosers should be interpreted with extreme caution due to low sample sizes on these comparisons (7 vs.13; 2 vs. 8, respectively).

Table 26. Source by Disclosure Category Interaction Results for Auxiliary Study Variables

Source*Disclosure Category on...	$F(2,96)$
Life Satisfaction	Ns
Target of Discrimination	ns
Career Outlook	ns
Authenticity Avg.	2.66 [†]
General Disclosure Avg.	ns
[†] $p = .08$	

For relative non-disclosers, ASO participants ($M = 5.25$) reporting valuing authenticity less than Internet participants ($M = 5.91$), $t(64) = -2.20, p = .03$. A different pattern of results emerged for selective disclosers, ASO participants ($M = 6.71$), who reported valuing authenticity more (not significant) than Internet participants ($M = 6.18$),

$t(18) = 1.60, p = .127$. A similar pattern emerged for full disclosers, ASO participants reported valuing authenticity more ($M = 6.30$), (but not significant) than Internet participants ($M = 6.00$), $t(8) = .59, p = .57$. Figure 9 shows the pattern of results.

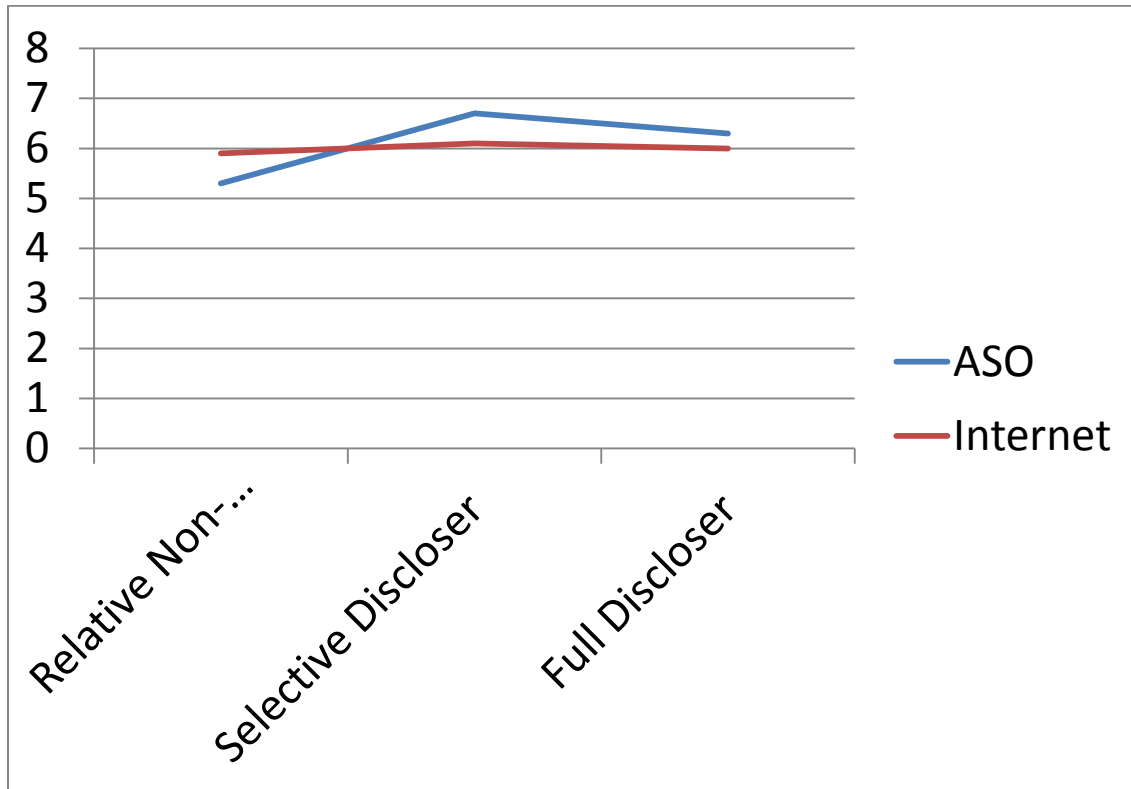


Figure 9. Pattern of reported authenticity: Subsample by disclosure category.

The results suggest that ASO participants reported value on authenticity fluctuates more with disclosure category than Internet participants. Internet participants seem to place a relatively high value on authentic, but authenticity does not seem to be related to the type of discloser a participant is. As previously mentioned these results are by no means conclusive because the sample size is relatively low for selectively discloser comparisons and very low for comparisons made within the full discloser category.

REFERENCE LIST

- Aberson, C. L., Healy, M., & Romero, V. (2000). Ingroup bias and self-esteem: A meta-analysis. *Personality and Social Psychology Review*, 4(2), 157-173.
- Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*, 18, 317-334.
- Abrams, D., & Hogg, M. A. (2004). Metatheory: Lessons from social identity research. *Personality and Social Psychology Review*, 8, 98-106.
- Abrams, D. & Hogg, M.A. (2010). Social identity and self-categorization. In J.F Dovidio, M. Hewstone, P. Glick & V.M. Esses (Eds.), *The SAGE Handbook of Prejudice, Stereotyping, and Discrimination* (pp. 131-145). SAGE Publications Ltd.
- Allport, G.W.(1954). *The Nature of Prejudice*. Reading, MA: Addison-Wesley.
- Altemeyer, B. (1981) *Right-wing Authoritarianism*. University of Manitoba Press.
- Altemeyer, B. (1998). The other 'authoritarian personality.' In M. Zanna (Ed.) *Advances in Experimental Social Psychology*, 30 (pp. 47-92). San Diego: Academic Press.
- Andreopoulou, A., & Houston, D. M. (2002). The impact of collective self-esteem on intergroup evaluation: Self-protection and self-enhancement. *Current Research in Social Psychology*, 7, 1-4.
- Arnold, E.M, Rice, E., Flannery, D. & Rotheram-Borus, M.J. (2008). HIV disclosure among adults living with HIV. *AIDS Care*, 20(1), 80-92.
- Aronson, J. & Inzlicht, M. (2004). The ups and downs of attributional ambiguity: Stereotype vulnerability and the academic self-knowledge of African-American students. *Psychological Science*, 15, 829-836.
- Bachmann L.H. ,Grimley D.M., Chen H, et al. (2009) Risk behaviors in HIV-positive men who have sex with men (MSM) participating in an intervention in a primary care setting. *International Journal of STDs/AIDS*, 20, 607-612.

- Batterham P, Rice E, Rotheram-Borus MJ. (2005). Predictors of serostatus disclosure to partners among young people living with HIV in the pre- and post-HAART eras. *AIDS Behavior*, 9, 281-287.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238.
- Bing, R. M., Burnam, M.A., Longshore, D., Fleishman, J.A., Sherbourne, C.D., London, A.S., et al. (2001). Psychiatric disorders and drug use among human immunodeficiency virus-infected adults in the United States. *Archives of General Psychiatry*, 58, 721-728.
- Blair, I.V. & Banaji, M.R. (1996). Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology*, 70, 1126-1141.
- Bodenhausen, G.V. (1993). Emotions, arousal and stereotyping judgments: A heuristic model of affect and stereotyping. In D.M. Mackie, & D.L. Hamilton (Eds.), *Affect, Cognition, and Stereotyping: Interactive Processes in Group Perception* (pp. 255-343), San Diego, CA: Academic Press.
- Bodenhausen, G.V. & Macrae, C. N. (1996). The self regulation of intergroup perception: Mechanisms and consequences of stereotype suppression. In C.N. Macrae, C. Stangor, & M. Hewstone (Eds.), *Stereotypes and Stereotyping* (pp. 227-253). New York: Guilford.
- Bos, A.E. R., Kanner, D., Muris, P., Janssen, B., & Mayer, B. (2009). Mental illness stigma and disclosure: Consequences of coming out of the closet. *Issues in Mental Health Nursing*, 30, 509-513.
- Branscombe, N.R., & Wann, D.L. (1994). Collective self-esteem consequences of outgroup derogation when a valued social identity is on trial. *European Journal of Social Psychology*, 24, 641-657.
- Brener, L., Callander, D., Slavin, S., & de Wit, J. (2013). Experiences of HIV stigma: the role of visible symptoms, HIV centrality and community attachment for people living with HIV. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV*, 25(9).
- Brewer, M.B. (1997). On the social origins of human nature. In C. McGarty & S.A. Haslam (Eds.), *The Message of Social Psychology* (pp. 54-62). Oxford, UK: Blackwell.

- Brewer, M.B. (1999). The psychology of prejudice: In group love and outgroup hate? *Journal of Social Issues*, 55, 429-444.
- Brewer, M.B., & Carporeal, L. (2006). An evolutionary perspective on social identity: Revisiting groups. In M. Schaller, J.A. Simpson, & D.T. Kenrick (Eds.), *Evolution and Social Psychology* (pp. 143-161). New York: Psychology Press.
- Brown, C., Matthews, K.A., Bromberger, J., & Yuefang, C. (2006). The relation between unfair treatment and blood pressure in a racially/ethnically diverse sample of women. *American Journal of Epidemiology*, 164, 257-262.
- Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological bulletin*, 115(3), 401.
- Chaudoir, S. R., & Fisher, J. D. (2010). The disclosure processes model: Understanding disclosure decision-making and post-disclosure outcomes among people living with a concealable stigmatized identity. *Psychological Bulletin*, 136, 236-256.
- Chaudoir, S.R & Quinn, D.M. (2010). Revealing concealable stigmatized identities: the impact of disclosure motivations and positive first-disclosure experiences on fear of disclosure and well-being. *Journal of Social Issues*, 66, 570-584.
- Chaudoir, S. R., Fisher, J. D., & Simoni, J. (2011). Understanding HIV disclosure: A review and application of the Disclosure Processes Model. *Social Science & Medicine*, 72, 1618-1629.
- Clark, R., Anderson, N. B., Clark, V. R., Williams, D.R. (1999). Racism as a stressor for African-Americans: A biopsychosocial model. *American Psychologist*, 54 (10), 805-816.
- Clark, H.J., Lindner, G. Armistead, L., & Austin, B. (2003). Stigma, disclosure, and psychological functioning among HIV-infected and non-infected African-American women. *Women and Health*.
- Cole, S.W., Kemeny, M.E., Taylor, S.E., & Visscher, B.R. (1996). Accelerated course of human immunodeficiency virus infection in gay men who conceal their homosexual identity. *Psychosomatic Medicine*, 58, 219-231.
- Cosmides, L. & Tooby, J. (2005). Neurocognitive adaptations designed for social exchange. In D.M Buss (Ed.) *The Handbook of Evolutionary Psychology* (pp. 548-627). New York: Wiley.

- Cottrell, C. A., & Neuberg, S. L. (2005). Different emotional reactions to different groups: A sociofunctional threat-based approach to 'prejudice.' *Journal of Personality and Social Psychology*, 88, 770-789.
- Crandall, C.S. (1991). Multiple stigma and AIDS : Illness stigma and attitudes toward homosexuals and IV drug users in AIDS- related stigmatization. *Journal of Community and Applied Social Psychology*, 1, 165-172.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self protective properties of stigma. *Psychological Review*, 96, 608-630.
- Crocker, J., Major, B & Steele, C.M. (1998). Social stigma. In D. Gilbert, S.T. Fiske, & G. Lindzey (Eds.), *Handbook of Social Psychology*, 4th ed (4th ed Vol. 2 pp. 504-533). New York: McGraw Hill.
- Cunningham, W. A., Nezlek, J. B., & Banaji, M. R. (2004). Implicit and explicit ethnocentrism: Revisiting the ideologies of prejudice. *Personality & Social Psychology Bulletin*. 30, 1332-1346.
- Deribe, K., Woldemichael, K., Wondafrash, M., Haile, A., & Alemayehu, A. (2008). Disclosure experience and associated factors among HIV positive men and women clinical service users in southwest Ethiopia. *BMC Public Health*, 8, 81.
- Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology*, 64(5), 834.
- Doojse, B., Branscombe, N. R., Spears, R., & Manstead, A. S. R. (1998). Guilty by association: When one's group has a negative history. *Journal of Personality and Social Psychology*, 75, 872-886.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. In M.P. Zanna (Ed.), *Advances in Experimental Social Psychology*, 33, 41-113. San Diego: Academic Press.
- Duckitt, J. (2006). Ethnocultural group identification and attitudes to ethnic outgroups. In G. Zhang, K. Leung, & J. Adair. (Eds.), *Perspectives and Progress in Contemporary Cross-Cultural Psychology. Selected Papers from the Seventeenth International Congress of the International Association for Cross-Cultural Psychology*. Beijing, China: Light Industry Press.
- Duff, K. (2011). *THINK Social Psychology*. Pearson.

- Ekehammar, B., & Akrami, N. (2003). The relation between personality and prejudice: A variable- versus a person-centred approach. *European Journal of Personality*, 17, 449-464.
- Ekehammar, B., & Akrami, N. (2007). Personality and prejudice: From Big Five personality factors to facets. *Journal of Personality*, 75, 899-926.
- Ekehammar, B., Akrami, N., Gylje, M., Zakrisson, I. (2004). What matters most to prejudice: Big Five personality, Social Dominance Orientation, or Right-wing Authoritarianism? *European Journal of Personality*, 18, 463-482.
- Faulkner, J., Schaller, M., Park, J. H., & Duncan, L. A. (2004). Evolved disease-avoidance mechanisms and contemporary xenophobic attitudes. *Group Processes and Intergroup Behavior*, 7, 333-353.
- Fazio, R. H., & Olson, M. A. (2003). Attitudes: Foundations, functions, and consequences. In M. A. Hogg & J. Cooper (Eds.), *The Sage Handbook of Social Psychology* (pp. 139-160). London: Sage.
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of Social Psychology* (4th ed., Vol. 2, pp. 357-411). New York: McGraw-Hill.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum model of impression formation, from category-based to individuating processes: Influence of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 23, pp. 1-74). New York: Academic Press.
- Frijda, N. H. (1986). *The Emotions*. London: Cambridge University Press.
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, Discrimination, and Racism*. Orlando, FL: Academic Press.
- Gagnon, A. & Bourhis, R. Y. (1996). Discrimination in the minimal group paradigm: Social identity or self-interest. *Personality and Social Psychology Bulletin*, 22, 1289-1301.
- Garson, D. *Path Analysis*. [Pdf document]. Retrieved from <http://tiny.cc/4uopgx>.
- Gigerenzer, G., Todd, P. M., & the ABC Research Group (1999). *Simple Heuristics That Make Us Smart*. New York: Oxford University Press.

- Gillath, O., Sesko, A. K., Shaver, P. R., & Chun, D. S. (2010). Attachment, authenticity, and honesty: dispositional and experimentally induced security can reduce self- and other-deception. *Journal of Personality and Social Psychology*, 98(5), 841.
- Greene, K., & Banerjee, S. C. (2006). Disease related stigma: Comparing predictors of AIDS and cancer stigma. *Journal of Homosexuality*, 50, 185-209.
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Englewood Cliffs, NJ: Prentice Hall.
- Grover, K. W., Miller, C. T., Solomon, S., Webster, R. J., & Saucier, D. A. (2010). Mortality salience and perceptions of people with AIDS: Understanding the role of prejudice. *Basic and Applied Social Psychology*, 32(4), 315-327.
- Heath, C., Bell, C., & Sternberg, E. (2001). Emotional selection in memes: The case for urban legends. *Journal of Personality and Social Psychology*, 81, 1028-1041.
- Heaven, P. C. L., & Bucci, S. (2001). Right-wing authoritarianism, social dominance orientation and personality: An analysis using the IPIP measure. *European Journal of Personality*, 15, 49-56.
- Herbert, T. B., & Cohen, S. (1993). Stress and immunity in humans: a meta-analytic review. *Psychosomatic Medicine*, 55(4), 364-379.
- Herek, G.M. (1990). Illness, stigma, and AIDS. In P. Costa & G.R. VandenBos (Eds.), *Psychological Aspects of Serious Illness* (pp. 103-150). Washington, DC: American Psychological Association.
- Herek, G. M. (2009). Hate crimes and stigma-related experiences among sexual minority adults in the United States: Prevalence estimates from a national probability sample. *Journal of Interpersonal Violence*, 24, 54-74.
- Herek, G.M., & Capitanio, J.P. (1998). Symbolic prejudice or fear of infection? A functional analysis of AIDS-related stigma among heterosexual adults. *Basic and Applied Social Psychology*, 20 (3), 230-241.
- Herek, G.M., & Capitanio, J.P. (1999). AIDS stigma and sexual prejudice. *American Behavioral Scientist*, 42, 1126-1143.
- Herek, G. M., Gillis, J. R., & Cogan, J. C. (2009). Internalized stigma among sexual minority adults: Insights from a social psychological perspective. *Journal of Counseling Psychology*, 56, 32-43.

- Herek, G.M., & Glunt, E.K. (1991). AIDS-related attitudes in the United States: A preliminary conceptualization. *The Journal of Sex Research*, 28 (1), 99-123.
- Hogg, M. A., & Abrams, D. (1988). *Social Identifications: A Social Psychology of Intergroup Relations and Group Processes*. London: Routledge.
- Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Inzlicht, M. & Ben-Zeev, T. (2000). A threatening intellectual environment: Why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychological Science*, 11, 365-371.
- Inzlicht, M. & Good, C. (2004). How environments can threaten academic performance, self-knowledge and sense of belonging. In S. Levin & C. van Laar (Eds.), *Stigma and Group Inequality: Social Psychological Perspectives* (pp. 45-54). Mahwah, NJ: Earlbaum.
- Isen, A.M. & Levin, P.F. (1972). The effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology*, 21, 384-388.
- Jöreskog, K. G. (2004). Lisrel. *Encyclopedia of Statistical Sciences*.
- Jost, J. T. & Banaji, M.R. (1994). The role of stereotyping in system justification and the production of false consciousness. *British Journal of Social Psychology*, 33, 1-27.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin*, 129, 339-375.
- Katz, J., Hass, G., Paris, I.N., Astone, J., McEvaddy, D., & Ljicido, D. (1987). Lay people's and health-care personnel's perceptions of cancer, AIDS, cardiac and diabetic patients. *Psychological Reports*, 60, 615-629.
- Kessler, T., & Hollbach, S. (2005). Group-based emotions as determinants of ingroup identification. *Journal of Experimental Social Psychology*, 41, 677-685.
- Kling, K.C., Hyde, J.S., Showers, C.J. & Buswell, B.N. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin*, 125, 470-500.

- Kruglanski, A.W. & Webster, D.M. (1996). Motivated closing of the mind: "Seizing" and "freezing". *Psychological Review*, 103, 263-283.
- Kurzban, R. & Leary, M.R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin*, 127, 187-208.
- LaVeist, T. (2005). *Minority Populations and Health: An Introduction to Health Disparities in the United States*. San Francisco: Jossey-Bass.
- Laythe, B., Finkel, D. G., Bringle, R. G., & Kirkpatrick, L. A.(2002). Religious fundamentalism as a predictor of prejudice: A two-component model. *Journal for the Scientific Study of Spirituality*, 41, 623-636.
- Lee, R.S., Kochman, A., & Sikkema, K.J. (2002). Internalized stigma among people living with HIV-AIDS. *AIDS and Behavior*, 6 309-319.
- Long, K., & Spears, R. (1997). The self-esteem hypothesis revisited: Differentiation and the disaffected. In R. Spears, P. J. Oakes, N. Ellemers, & S. A. Haslam (Eds.) *The Social Psychology of Stereotyping and Group Life* (pp. 296-317). Oxford: Blackwell.
- Loubiere S, Peretti-Watel P, Boyer S, Blanche J, Abega SC, Spire B. (2009). HIV disclosure and unsafe sex among HIV-infected women in Cameroon: Results from the ANRS-EVAL study. *Social Science Medicine* 69,885-891.
- Mackie, D. M., & Smith, E. R. (Eds.), (2002). *From Prejudice to Intergroup Emotions: Differentiated Reactions to Social Groups*. Philadelphia: Psychology Press.
- Mackie, D.M., Devos, T. & Smith, E.R. (2000). Intergroup emotions: Explaining offensive action tendencies in intergroup conflict. *Journal of Personality and Social Psychology*, 79, 602-616.
- Macrae, C.N., Stangor, C., & Milne, A.B.(1994). Activating social stereotypes: A functional analysis. *Journal of Experimental Social Psychology*, 33, 471-489.
- Major, B., & Crocker, J. (1993). Social stigma: The consequences of attributional ambiguity. In D.M. Mackie & D. L. Hamilton (Eds.), *Affect, Cognition, and Stereotyping: Interactive Processes in Group Perception* (pp. 345-370). San Diego, CA: Academic Press.
- Major,B., Gramzow, R., McCoy, S.K., Levin, S., Schmader, T., & Sidanius, J. (2002). Perceiving personal discrimination: The role of group status and status legitimizing ideology. *Journal of Personality and Social Psychology*, 80, 782-796.

- Maner, J.K, Gaillot, M.T., Rouby, D.A., & Miller, S.L. (2007). Can't take my eyes off you: Attentional adhesion to mates and rivals. *Journal of Personality and Social Psychology*, 93, 389-401.
- Maner, J. K., Kenrick, D. T., Becker, D. V., Robertson, T., Hofer, B., Delton, A. W., Neuberg, S. L., Butner, J., & Schaller, M. (2005). Functional projection: How fundamental social motives can bias interpersonal perception. *Journal of Personality and Social Psychology*, 88, 63-78.
- McDonald, R. P., & Ho, M. H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64.
- Niccolai, L.M., King, E., D'entremont, D., Pritchett, E.N. (2006). Disclosure of HIV serostatus to sex partners: A new approach to measurement. *Sexually Transmitted Diseases*, 33, 102-105.
- Oakes, P.J. (1978). The salience of social categories. In J.C. Turner, M.A. Hogg, P.J. Oakes, S.D. Reicher & M.S. Wetherell (Eds.), *Rediscovering the Social Group: A Self-Categorization Theory* (pp.117-141). Oxford: Blackwell.
- Ohman, A. & Mineka, S. (2001) Fears, phobias and preparedness: Toward an evolved module of fear and fear learning. *Psychological Review*, 108, 483-522.
- Overstreet, N.M., Earnshaw, V.A., Kalichman, S.C. & Quinn, D.M. (2012). Internalized stigma and HIV status disclosure among HIV-positive black men who have sex with men. *AIDS Care*, 1-6.
- Pagel, M. D., Erdly, W. W., & Becker, J. (1987). Social networks: we get by with (and in spite of) a little help from our friends. *Journal of Personality and Social Psychology*, 53(4), 793.
- Park, J. H., Schaller, M., & Crandall, C. S. (2007). Pathogen-avoidance mechanisms and the stigmatization of obese people. *Evolution and Human Behavior*, 28, 410-414.
- Pascoe, E.A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531-554.
- Penner, L. A., Dovidio, J.F., Edmonson, D., Albrecht, T.L., Markova, T., Gaertner, S.L. et al. (2009). Subtle racism, experience with discrimination and black-white health disparities: Social policy implications. *Social Issues and Policy Review*, 1, 63-98.

- Peretti-Watel P, Spire B, Pierret J, Lert F, Obadia Y. (2006). Management of HIV-related stigma and adherence to HAART: evidence from a large representative sample of outpatients attending French hospitals . *AIDS Care*, 18, 254-261.
- Platow, M. J., Harley, K., Hunter, J. A., Hanning, P., Shave, R. & O'Connell (1997). Interpreting in-group-favouring allocations in the minimal group paradigm. *British Journal of Social Psychology*, 36, 107-117.
- Pratto, F., & Shih, M. (2000). Social dominance orientation and group context in implicit group prejudice. *Psychological Science*, 11, 515-518.
- Pratto, F., Sidanius, J., Stallworth, L.M., & Bertram, F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741-763.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891.
- Pryor, J. B., & Reeder, G. D. (1993). *The Social Psychology of HIV Infection*. Hillsdale, NJ: Erlbaum.
- Pryor, J. B., Reeder, G. D., & Landau, S. (1999). A social psychological analysis of HIV-related stigma: A two-factor theory. *American Behavioral Scientist*, 42, 1193-1211
- Pryor, J. B., Reeder, G. D., Vinacco, R., & Kott, T. L. (1989). The instrumental and symbolic functions of attitudes toward persons with AIDS. *Journal of Applied Social Psychology*, 19, 377-404.
- Quinn, D. M., & Chaudoir, S. R. (2009). Living with a concealable stigmatized identity: The impact of anticipated stigma, centrality, salience, and cultural stigma on psychological distress and health. *Journal of Personality and Social Psychology*, 97, 634-651.
- Rao, D., Pryor, J. B., Gaddist, B. W., & Mayer R. (2008). Stigma, secrecy, and discrimination: Ethnic/racial differences in the concerns of people living with HIV/AIDS. *AIDS and Behavior*, 12, 265-271.
- Ruehlman, L. S., & Karoly, P. (1991). With a little flak from my friends: Development and preliminary validation of the Test of Negative Social Exchange (TENSE). *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(1), 97.

- Richeson, J.A. & Shelton, J.N. (2003). When prejudice does not pay: Effect of interracial contact on executive function. *Psychological Science*, 14, 287-290.
- Rook, K. S., & Pietromonaco, P. (1987). Close relationships: Ties that heal or ties that bind. *Advances in Personal Relationships*, 1, 1-35.
- Rothbart, M. (1981). Memory processes and social beliefs. In D.L. Hamilton (Ed.), *Cognitive Processes in Stereotyping and Intergroup Behavior* (pp. 145-182). Mahwah, NJ: Erlbaum.
- Rowatt, W. C., & Franklin, L. (2004). Christian orthodoxy, religious fundamentalism, and right-wing authoritarianism as predictors of implicit racial prejudice. *The International Journal for the Psychology of Religion*, 14, 125-138.
- Rowatt, W. C., Tsang, J., Kelly, J., LaMartina, B., McCullers, M. & McKinley, A. (2006). Associations between religious personality dimensions and implicit homosexual prejudice. *Journal for the Scientific Study of Religion*, 45, 397-406.
- Rozin, P., Markwith, M., & McCauley, C. (1994). Sensitivity to indirect contacts with other persons: AIDS aversion as a composite of aversion to strangers, infection, moral taint, and misfortune. *Journal of Abnormal Psychology*, 103, 495-505.
- Russell, A. M., & Fiske, S. T. (2010). Power and social perception. In A. P. Guinote & T. K. Vescio (Eds.), *The Social Psychology of Power* (pp. 231-250). New York: Guilford.
- Sayles, J.N., Hays, R.D., Sarkisian, C.A., Mahajan, A.P., Spritzer, K.L., & Cunningham, W.E. (2008). Development of psychometric assessment of a multidimensional measure of internalized HIV stigma in a sample of HIV positive adults. *AIDS Behavior*, 12, 748-758.
- Schaller, M., & Duncan, L. A. (2007). The behavioral immune system: Its evolution and social psychological implications. In J. P. Forgas, M. G. Haselton, & W. von Hippel (Eds.), *Evolution and the Social Mind: Evolutionary Psychology and Social Cognition* (pp. 293-307). New York: Psychology Press.
- Schaller, M., & Neuberg, S. L. (2008). Intergroup prejudices and intergroup conflicts. In C. Crawford & D. L. Krebs (Eds.), *Foundations of Evolutionary Psychology* (pp. 399-412). Mahwah NJ: Lawrence Erlbaum Associates.
- Schaller, M., Conway, L.G., & Peavy, M. (2010). Evolutionary processes. In J.F Dovidio, M. Hewstone, P. Glick & V.M. Esses (Eds.), *The SAGE Handbook of Prejudice, Stereotyping, and Discrimination* (pp. 81-96). SAGE Publications Ltd.

- Schaller, M., Conway, L. G., III, & Tanchuk, T. L. (2002). Selective pressures on the once and future contents of ethnic stereotypes: Effects of the communicability of traits. *Journal of Personality and Social Psychology*, 82, 861-877.
- Schaller, M., Park, J.H., & Faulkner, J. (2003). Prehistoric dangers and contemporary prejudices. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 14, pp.105-137). Hove UK: Psychology Press.
- Schaller, M., Park, J. H., & Mueller, A. (2003). Fear of the dark: Interactive effects of beliefs about danger and ambient darkness on ethnic stereotypes. *Personality and Social Psychology Bulletin*, 29, 637-649.
- Schwarz, N., & Clore, G.L. (1983). Mood, misattribution, and judgments of well-being: Informative directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-523.
- Schreiber, J.B., Stage, F.K., King, J., Nora, A. & Barlow, E.A. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99, 323-337.
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the Big-Five personality traits and its relations with psychological authenticity and subjective well-being. *Journal of Personality and Social Psychology*, 73(6), 1380.
- Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review*, 12, 248-279.
- Sidanius, J., & Pratto, F. (1999). *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. New York: Cambridge University Press.
- Smith, E.R. & Mackie, D.M. (2010). Affective processes. In J.F Dovidio, M. Hewstone, P. Glick & V.M. Esses (Eds.), *The SAGE Handbook of Prejudice, Stereotyping, and Discrimination* (pp. 131-145). SAGE Publications Ltd.
- Smith, E.R., Seger, C. R., & Mackie, D.M. (2007) Can emotions be truly group level? Evidence for four conceptual criteria. *Journal of Personality and Social Psychology*, 93, 431-446.
- Sniderman, P.M. & Piazza, T. (1993). *The Scar of Race*. Cambridge, MA: Harvard University Press.

- Ssali SN, Atuyambe L, Tumwine C, et al. (2010). Reasons for disclosure of HIV status by people living with HIV/AIDS and in HIV care in Uganda: An exploratory study. *AIDS Patient Care STDs*, 24,675-681.
- Steele, C.M. & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology*, 69, 797-811.
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate behavioral research*, 25(2), 173-180.
- Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, 42(5), 893-898.
- Stephan, W.G. & Findlay, K. (1999). The role of empathy in improving intergroup relations. *Journal of Social Issues*, 55, 729-743.
- Stephan, W. G., & Stephan, C.W. (1985). Intergroup anxiety. *Journal of Social Issues* 41, 157-175.
- Stirratt, M.J., Remein, R.H., Smith, A., Copeland, O.Q., Dolezal, C., Krieger, D., et al. (2006). The role of HIV serostatus disclosure in antiretroviral medication adherence. *AIDS Behavior*, 10, 483-493.
- Stutterheim, S.E., Bos, A.E.R., Pryor, J.B., Brands, R., Liebrechts, M., & Schaalma, H.P. (2011). Psychological and social correlates of HIV status disclosure: The significance of stigma visibility. *AIDS Education and Prevention*, 23, 382-392.
- Swim, J.K. & Thomas, M.A. (2006). Responding to everyday discrimination: A synthesis of research on goal-directed, self-regulatory coping behaviors. In S. Levin & C. van Laar (Eds.), *Stigma and Group Inequality: Social Psychological Perspectives* (pp. 105-126). Mahwah, NJ: Erlbaum.
- Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Social Issues*, 25, 79-97.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7-24). Chicago, IL: Nelson-Hall.
- Taylor, S.E. (1981). A categorization approach to stereotyping. In D.L. Hamilton (Ed.), *Cognitive Processes in Stereotyping and Intergroup Behavior* (pp. 83-114). Mahwah, NJ: Erlbaum.

- Tomaka, J., Blascovich, J., Kelsey, R. M., & Leitten, C. L. (1993). Subjective, physiological, and behavioral effects of threat and challenge appraisal. *Journal of Personality and Social Psychology*, 65, 248-260.
- Turner, J. C. (1999) Current issues in research on social identity and self-categorization theories. In N. Ellemers, R. Spears & B. Doosje (Eds.), *Social Identity: Context, Commitment, Content*. Oxford, UK & Cambridge, USA: Blackwell.
- Twenge, J., & Crocker, J. (2002). Race, ethnicity, and self-esteem: Meta-analyses comparing Whites, Blacks, Hispanics, Asians, and Native Americans, including commentary on Gray-Little and Hafdahl (2000). *Psychological Bulletin*, 128, 371-408.
- Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*, 119(3), 488.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063.
- Weiner, B. (1993). AIDS from an attributional perspective. In J.B. Pryor, & G.D. Reeder (Eds.), *The Social Psychology of HIV Infection*. Hillsdale, NJ: Erlbaum.
- Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of the Authenticity Scale. *Journal of Counseling Psychology*, 55(3), 385.
- Wyer, R. S., & Srull, T. K. (1989). *Memory and Cognition in its Social Context*. Hillsdale, NJ: Erlbaum.
- Young, J.R. (2003). The role of fear in agenda setting by television news. *American Behavioral Scientist*, 46, 1673-1695.
- Zea M.C., Reisen C.A., Poppen P.J., Echeverry J.J, Bianchi FT. (2004). Disclosure of HIV-positive status to Latino gay men's social networks. *American Journal of Community Psychology*, 33, 107-116.
- Zebrowitz, L.A., Fellous, J.M., Mignault, A. & Andreoletti, C. (2003). Trait impressions as over generalized responses to adaptively significant facial qualities: Evidence from connectionist modeling. *Personality and Social Psychology Review*, 7, 194-215.

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